



**WEST VIRGINIA SECRETARY OF STATE**

**MAC WARNER**

**ADMINISTRATIVE LAW DIVISION**

**eFILED**

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Office of West Virginia  
Secretary Of State

**NOTICE OF FINAL FILING AND ADOPTION OF A LEGISLATIVE EXEMPT, INTERPRETIVE OR PROCEDURAL  
RULE**

AGENCY: Education TITLE-SERIES: 126-044M

RULE TYPE: Legislative Exempt Amendment to Existing Rule: Yes Repeal of existing rule: No

RULE NAME: West Virginia College- and Career-Readiness  
Programs of Study/Standards for Career  
Technical Education (2520.13)

CITE STATUTORY AUTHORITY: W. Va. Code §§29A-3B-1, et seq.; W. Va. Board of Education v. Hechler,  
180 W. Va. 451, 376 S.E.2d 839 (1988); and, W. Va. Bd. of Educ. v. Bd. of  
Educ., 239 W. Va. 705, 806 S.E. 2d 136 (2017)

This rule is filed with the Secretary of State. This rule becomes effective on the following date:

July 1, 2022

**BY CHOOSING 'YES', I ATTEST THAT THE PREVIOUS STATEMENT IS TRUE AND CORRECT.**

**Yes**

**Michele L Blatt -- By my signature, I certify that I am the person authorized to file  
legislative rules, in accordance with West Virginia Code §29A-3-11 and §39A-3-2.**

**126CSR44M**

**TITLE 126  
LEGISLATIVE RULE  
BOARD OF EDUCATION**

**SERIES 44M  
WEST VIRGINIA COLLEGE- AND CAREER-READINESS PROGRAMS OF STUDY/STANDARDS  
FOR CAREER TECHNICAL EDUCATION (2520.13)**

**§126-44M-1. General.**

1.1. Scope. -- W. Va. 126CSR42, Policy 2510, Assuring the Quality of Education: Regulations for Education Programs (Policy 2510), provides a definition of a delivery system for, and an assessment and accountability system for a thorough and efficient education for West Virginia public school students. W. Va. 126CSR44M, Policy 2520.13, West Virginia College- and Career-Readiness Programs of Study/Standards for Career Technical Education (Policy 2520.13), defines the college- and career-readiness programs of study/standards for career technical education (CTE) as required by Policy 2510.

1.2. Authority. -- W. Va. Constitution, Article XII, §2; and W. Va. Code §§18-2-5, 18-2E-1, 18-6-1 et seq., and 18-9A-22.

1.3. Filing Date. -- February 10, 2022.

1.4. Effective Date. -- July 1, 2022.

1.5. Repeal of Former Rule. -- This rule repeals and replaces W. Va. 126CSR44M, Policy 2520.13, College- and Career-Readiness Programs of Study/Standards for Career Technical Education, filed January 11, 2019, and effective July 1, 2019.

**§126-44M-2. Purpose.**

2.1. This policy defines the West Virginia college- and career-readiness programs of study/content standards for the programs of study required by Policy 2510.

**§126-44M-3. Incorporation by Reference.**

3.1. A copy of the West Virginia College- and Career-Readiness Programs of Study/Standards for CTE is attached and incorporated by reference into this policy. Copies of Policy 2520.13 may be obtained from the Office of the Secretary of State and/or the West Virginia Department of Education (WVDE).

**§126-44M-4. Summary of the West Virginia College- and Career-Readiness Programs of Study/Content Standards for CTE.**

4.1. The West Virginia Board of Education (WVBE) has the responsibility for establishing high-quality standards pertaining to all educational programs. The West Virginia College- and Career-readiness Programs of Study/Content Skillsets (CSS) provide a focus for teachers to teach and students to learn those skills and competencies essential for future success in the workplace and further education. The document includes West Virginia college- and career-readiness programs of study/content standards by

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Career Cluster and Pathway; Simulated Workplace protocols; ACE programs of study; standards for participation in a co-curricular career technical student organization (CTSO); changes to student performance measures; definitions and acronyms; and West Virginia Education Information System (WVEIS) prefixes for each cluster.

### **§126-44M-5. Severability.**

5.1. If any provision of this policy or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of this policy.

**WEST VIRGINIA COLLEGE- AND CAREER-READINESS PROGRAMS OF STUDY/STANDARDS  
FOR CAREER TECHNICAL EDUCATION (2520.13)**

**Introduction**

Policy 2520.13 has been developed with the goal of preparing students for a wide range of high-quality postsecondary opportunities within a Simulated Workplace environment. Specifically, college- and career-readiness refers to the knowledge, skills, and dispositions needed to be successful in obtaining an entry-level job and continued training in a specific craft and/or higher education that all lead to gainful employment. Policy 2520.13 establishes a set of knowledge and skills that all individuals need to transition into the workplace or higher education, as both realms share many expectations. All students throughout their educational experience should develop a full understanding of the career opportunities available and the education necessary to be successful in their chosen pathway and a plan to attain their goals.

Committees of educators and representatives from business and industry from across West Virginia were convened to revise the specific CSS standards and skillsets for each CTE program of study. The overarching goal was to build a rigorous, dynamic, and challenging CTE career pathway that would prepare students for the workforce and/or postsecondary education. The committees focused their efforts in shaping the CSS standards to align with industry standards, industry-recognized certifications, research, and best practice in the field of CTE. The contribution of these professionals was critical in creating CSS standards that further define the College- and Career-Readiness Programs of Study/Standards and are meaningful to classroom teachers.

Policy 2520.13 assures the delivery of rigorous and relevant CTE standards to all West Virginia students within a Simulated Workplace environment. These elements, when used to guide the instructional process and delivered with the creativity and instructional expertise of West Virginia teachers, will become a powerful resource for preparing students to meet today's challenges.

## CTE – Alpha Listing of State-Approved Programs of Study, Clusters and Pathways

Program of Study	POS #	Cluster	Pathway
Accounting and Finance	FI1410	Finance	Business Financial Management
Administrative Support	BM1465	Business Management and Administration	Administrative Support
Advanced Medical Preparedness	HE1010	Health Science	Therapeutic Services
Aerospace Engineering	ST2200	Science, Technology, Engineering and Mathematics	Engineering & Technology
Agribusiness Systems	AG0120	Agriculture, Food and Natural Resources	Agribusiness Systems
Allied Health Sciences	HE0715	Health Science	Therapeutic Services
Animal Processing	AG0230	Agriculture, Food and Natural Resources	Food Products & Processing Systems
Animal Systems	AG0220	Agriculture, Food and Natural Resources	Animal Systems
Automotive Technology	TR1620	Transportation, Distribution and Logistics	Facility & Mobile Equipment Maintenance
Aviation Maintenance Technician	MA1601	Manufacturing	Production
Baking and Pastry	HO1015	Hospitality and Tourism	Restaurants & Food/ Beverage Services
Biomedical Science	HE0780	Health Science	Biotechnology Research & Development
Broadcasting Technology	AV1680	Arts, A/V Technology and Communications	Journalism & Broadcasting
Building Maintenance and Operations	AR1800	Architecture and Construction	Maintenance/Operations
Business for College	BM1510	Business Management and Administration	General Management
Career and Work Skills Training (CWST)	BM0510	Business Management and Administration	Administrative Support
Career Integrated Experiential Learning (CIEL)	WV5501	West Virginia Specific Career	Career Integrated Experiential Learning
Carpentry	AR1820	Architecture and Construction	Construction
Cisco Networking Academies	IT1640	Information Technology	Network Systems
Coding, App and Game Design	IT1442	Information Technology	Interactive Media
Collision Repair Technology	TR1670	Transportation, Distribution and Logistics	Facility & Mobile Equipment Maintenance
Computer Aided Drafting and Design	AR1720	Architecture and Construction	Design/Pre-construction
Computer Science	IT2215	Information Technology	Computer Programming & Software Development
Computer Systems Repair Technology	IT1680	Information Technology	Network Systems
Dental Assisting	HE0700	Health Science	Therapeutic Services
Diesel Equipment Technology	TR1740	Transportation, Distribution and Logistics	Facility & Mobile Equipment Maintenance
Early Childhood Classroom Assistant Teacher	ED1320	Education and Training	Teaching/Training
Electrical Technician	AR1760	Architecture and Construction	Construction
Emergency and Firefighting Management	LA2200	Law, Public Safety, Corrections & Security	Emergency and Firefighting Management Services

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Program of Study	POS #	Cluster	Pathway
Services			
Energy and Power	ST2175	Science, Technology, Engineering and Mathematics	Engineering & Technology
Entrepreneurship & Innovation	BM1950	Business Management and Administration	Administrative Support
Forest Industry	AG0130	Agriculture, Food and Natural Resources	Natural Resources Systems
Global Logistics and Supply Chain Management	TR2215	Transportation, Distribution and Logistics	Transportation Systems / Infrastructure Planning, Management & Regulation
Graphic Design	AV1850	Arts, A/V Technology and Communications	Visual Arts
Hospitality and Tourism	HO1210	Hospitality and Tourism	Travel & Tourism
Human Services	HU1025	Human Services	Family & Community Services
HVAC Technician	AR1600	Architecture and Construction	Maintenance/Operations
Individual Work Ready Competencies (IWRC)	WV5502	West Virginia Specific Career	Individual Work Ready Competencies
Industrial Equipment Maintenance	MA1870	Manufacturing	Maintenance, Installation, & Repair
Industrial Robotics	MA1650	Manufacturing	Manufacturing Production Process Development
Informatics	IT2210	Information Technology	Information Support & Services
Information Management	IT1450	Information Technology	Interactive Media
Integrated Production Technologies	MA2235	Manufacturing	Manufacturing Production Process Development
JROTC	GO1070	Government and Public Administration	National Security
Law and Public Safety	LA1020	Law, Public Safety, Corrections & Security	Law Enforcement Services
Machine Tool Technology	MA1900	Manufacturing	Production
Marketing Management	MK0420	Marketing	Marketing Management
Masonry	AR1910	Architecture and Construction	Construction
Millwork and Cabinetmaking	MA2120	Manufacturing	Production
Multimedia Publishing	AV1684	Arts, A/V Technology and Communications	Journalism & Broadcasting
Natural Resources Management	AG0170	Agriculture, Food and Natural Resources	Natural Resources Systems
Pet Grooming	AG0223	Agriculture, Food and Natural Resources	Animal Systems
Plant Systems	AG0210	Agriculture, Food and Natural Resources	Plant Systems
Plumbing	AR2140	Architecture and Construction	Construction
Power Equipment Systems	TR1960	Transportation, Distribution and Logistics	Facility & Mobile Equipment Maintenance
Power, Structural and Technical Systems	AG0110	Agriculture, Food and Natural Resources	Power, Structural & Technical Systems
Pre-Cosmetology	HU2311	Human Services	Personal Care Services
Pre-Engineering	ST2460	Science, Technology, Engineering and	Engineering & Technology

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Program of Study	POS #	Cluster	Pathway
		Mathematics	
ProStart Restaurant Management	HO1010	Hospitality and Tourism	Restaurants & Food/ Beverage Services
Robotics	MA1630	Manufacturing	Manufacturing Production Process Development
Sign Language Interpreter	HU1035	Human Services	Consumer Services
Sports Medicine	HE0800	Health Science	Therapeutic Services
Therapeutic Services	HE0723	Health Science	Therapeutic Services
Virtual Simulation and Game Development	IT1445	Information Technology	Interactive Media
Welding	MA1980	Manufacturing	Production

## ACE – Alpha Listing of State-Approved Programs of Study, Clusters and Pathways

Program of Study	POS #	Cluster	Pathway
American Sign Language (ASL) Interpreter	HU9205	Human Services	Consumer Services
Automated Manufacturing Technology	MA9709	Manufacturing	Production
Automotive Technician	TR9801	Transportation, Distribution and Logistics	Facility and Mobile Equipment Maintenance
Aviation Maintenance Technology	MA9710	Manufacturing	Production
Barbering	HU9501	Human Services	Personal Care Services
Certified Nursing Assistant	HE9308	Health Science	Therapeutic Services
Certified Welding	MA9704	Manufacturing	Production
Commercial Driving	TR9803	Transportation, Distribution and Logistics	Transportation Operations
Cosmetology	HU9505	Human Services	Personal Care Services
Culinary Arts	HO9401	Hospitality and Tourism	Restaurants and Food/Beverages Services
Dental Assisting	HE9306	Health Science	Therapeutic Services
Diesel Mechanic	TR9802	Transportation, Distribution and Logistics	Facility and Mobile Equipment Maintenance
ECCAT	ED9901	Education and Training	Teaching/Training
Electrical Technician	AR9101	Architecture and Construction	Construction
Electrocardiograph Technician	HE9302	Health Science	Diagnostic Services
Heavy Equipment Operator	AR9107	Architecture and Construction	Maintenance/Operations Pathway
HVAC Technician	AR9105	Architecture and Construction	Maintenance/Operations Pathway
Manufacturing Robotics	MA9705	Manufacturing	Manufacturing Production Process Development
Massage Therapy	HE9314	Health Science	Therapeutic Services
Medical Assisting	HE9307	Health Science	Therapeutic Services
Phlebotomy Technician	HE9301	Health Science	Diagnostic Services
Plumber in Training	AR9103	Architecture and Construction	Construction
Practical Nursing	HE9311	Health Science	Therapeutic Services
Respiratory Therapy	HE9312	Health Science	Therapeutic Services
Surgical Technology	HE9313	Health Science	Therapeutic Services
Veterinary Technology	HE9305	Health Science	Therapeutic Services



## Definitions

**Advanced Career Education (ACE).** Programs designed to provide adult students with specific workforce training. ACE programs offer credentials, certifications, and licenses at nationally accredited career centers.

**Advisory Councils.** Comprised of two to five members external to the institution. Each member shall have knowledge and expertise in the occupational field represented. The advisory committee meets twice annually (in-person or virtually) with two external members present at each meeting. The advisory committee must follow an agenda and maintain typed minutes.

**Approved CTE Programs List.** Identifies the state-approved programs of study for individual schools as required by The Carl D. Perkins Career and Technical Education Act of 2006, as amended by the Strengthening Career and Technical Education for the 21<sup>st</sup> Century Act (Perkins V), Public Law 115-224.

**Career Technical Education (CTE).** Provides an important pathway to success for secondary students and offers students an opportunity to personalize their education based on career interests and unique learning needs.

**Career Technical Standards.** A set of rigorous, high-quality pathway standards that define what students should know and be able to do after completing instruction in a related CTE program.

**Career Clusters.** Broad groupings of related careers as defined by the United States Department of Education (ED) and United States (U.S.) Department of Labor – Occupational Classification.

**Career Integrated Experiential Learning (CIEL).** A personalized CTE program of study developed to meet student needs by providing them marketable job skills and opportunities to test for multiple nationally recognized certifications.

**Career Pathways.** Subcategories of closely related careers under each of the 16 Career Clusters.

**Career Experience.** Includes work-based learning opportunities, such as internships and apprenticeships, designed to enhance technical instruction and academic competencies with on-the-job training (OJT) experiences. Each industry training shall have an annually signed agreement between the school and the participating business.

**Career Learning.** Connects meaningful community service experiences with classroom learning and civic responsibility, allowing students to apply academic concepts to authentic projects in the community.

**Career Preparation.** Blends classroom instruction with work-based learning experience at a business, industrial establishment, or community organization where students work with an employer for a specific period. Career Preparation experiences are curriculum driven work-based learning opportunities established by a CTE program of study or courses that can be paid or unpaid.

**Career Technical Student Organizations (CTSO).** CTE organizations primarily based in high schools, comprehensive high schools, and career technical centers. CTSOs are integrated into programs of study as co-curricular activities and designated as nonprofit organizations. CTSOs are authorized by the U.S. Congress in Perkins V.

**Carl D. Perkins Career and Technical Education Act of 2006, as amended by the Strengthening Career and Technical Education for the 21<sup>st</sup> Century Act (Perkins V).** Develops the academic knowledge and technical/employability skills of secondary and postsecondary education students who elect to enroll in CTE programs. Perkins V requires secondary, postsecondary, and business/industry to work together to strengthen CTE for students. Funding may be used for occupationally relevant equipment, vocational curriculum materials, materials for learning labs, curriculum development or modification, professional learning, career counseling and guidance activities, efforts for academic-vocational integration, supplemental services for special populations, recruit and retain vocational staff, support student organizations, and the expansion of middle school vocational programs. Funds are allocated to county boards of education, multi-county vocational centers, schools of diversion and transition, and postsecondary institutions with CTE programs.

State Determined Levels of Performance are utilized to assess the effectiveness of Perkins at the state, county, and school levels. The State Determined Levels of Performance include the following indicators:

- graduation rate,
- academic proficiency (mathematics, science, English language arts),
- post program placement,
- non-traditional program enrollment,
- postsecondary credentials,
- work-based learning, and
- CTE completers.

**Certification.** A designation earned by a person to assure qualification to perform a particular job or task and is approved by a recognized credentialing agency.

**Civil Rights.** ED's Office of Civil Rights (OCR) oversees the civil rights compliance programs of state agencies that administer CTE. Pursuant to federal guidelines, entitled Guidelines for Eliminating Discrimination and Denial of Services on the Basis of Race, Color, National Origin, Sex and Handicap in Vocational Education Programs (34 C.F.R. Part 100, Appendix B), state agencies are required to collect and analyze civil rights-related data, conduct periodic civil rights compliance reviews of selected subrecipients, notify subrecipients of violations and steps they must take to remedy unlawful discrimination, provide technical assistance upon request to subrecipients, and report these Methods of Administration (MOA) compliance activities and findings periodically to OCR.

**CTE Completer.** A student who completes the following state-approved requirements:

- four courses as defined within a CTE program of study, and
- career/industry specific technical assessment.

**CTE Concentrator.** A student who has completed at least two courses in a CTE program of study (grades 5-12).

**CTE Elective Offerings.** State-approved courses which provides enhanced opportunities to build upon the required four core courses and functions to meet student needs, interests, abilities, and goals. CTE elective offerings also respond to actual or anticipated opportunities for employment, advanced education, and practical life application.

**CTE Multi-Completer.** A student who completes the four required state-approved sequence of courses within more than one CTE program of study and participates in a state-approved technical assessment.

**CTE Participant.** A student who takes a minimum of one state-approved CTE required, specialization, elective, or foundation course.

**CTE Portfolio.** A resume and a collection of documents, showcasing an individual's learning experiences, goals, and achievements.

**CTE Program Categories:**

- CTE Concentration. A locally approved sequence of four CTE courses.
- State-approved CTE program of study. Four CTE courses as define within a CTE program of study, impacts state economic labor market needs as verified by Workforce data, and leads to an industry-recognized credential/certificate or postsecondary education.

**CTE School Types:**

- CTE in High School. A high school offering four or less career clusters.
- Comprehensive High School. A high school offering career clusters based on the student population. Schools with a population of:
  - 0-400 students must offer a minimum of three career clusters,
  - 401-800 students must offer a minimum of four career clusters, or
  - 801+ students must offer a minimum of five career clusters.
- County Career Center. A career center that services students from the county in which it is located.
- Multi-county Career Center. Two or more contiguous counties joined together to provide programs at a CTE center that serves students from all participating counties. Refer to W. Va. 126CSR71, Policy 3232, Establishment Procedures and Operating Policies for Multi-county Career and Technical Education Centers.
- CTE in Specialized Facilities. A state-approved facility (e.g., West Virginia Schools for the Deaf and Blind, schools of diversion and transition) offering students CTE opportunities.

**Earn a Degree-Graduate Early (EDGE).** An opportunity that provides students both high school and college technical education credit at the discretion of the postsecondary institution. Such an opportunity must meet both the specified content skillsets for the secondary offerings and the college course requirements.

**Foundational CTE Course.** An offering that provides an introduction to a CTE program of study.

**Individual Work Ready Competencies (IWRC).** A state-approved CTE career pathway which provides students with a disability and a current Individualized Education Program (IEP) the opportunity to gain valuable work readiness and occupational skills as determined by the Student Assistance Team.

**Industry Recognized Credentials/Certificates.** Certifications, licenses, or certificates business and industry recognize as valuable and illustrate an individual's understanding and/or mastery of technical knowledge.

**Personal Protective Equipment (PPE).** Appropriate industrial-quality protective-ware provided, used, and maintained in a sanitary and reliable condition where it is necessary by reason of hazards processes/environments, chemical and radiological hazards, or mechanical irritants encountered in a manner capable of causing injury/impairment to any part of the body. Types of protective-ware include, but are not limited to, protective clothing, respiratory devices, and protective shields and barriers used to protect eyes, ears, face, head, and extremities. PPE shall be worn by every student, instructor, or any other person in educational programs, laboratories, or shops in the public schools of West Virginia when instructional/observational activities are such that students, instructors, or other persons are exposed to:

- a. flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation;
- b. air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, with the primary objective being the prevention of atmospheric contamination;
- c. powered milling, sawing, turning, shaping, cutting, sanding, grinding, or stamping of any solid materials;
- d. hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes;
- e. foot injuries due to falling or rolling objects, or objects piercing the sole, or when the use of protective footwear will protect the affected employee from an electrical hazard, such as a static-discharge or electric-shock hazard, that remains after the employer takes other necessary protective measures;
- f. potential for injury to the head from falling objects;
- g. heat treatment, tempering, or kiln firing of any metal or other materials;
- h. gas or electric arc welding or other forms of welding processes and injurious radiations or other hazards not enumerated;
- i. caustic or explosive materials and hot liquids or solids; and
- j. occupational noise at or above 85 decibels for an extended period of time (National Institute for Occupational Safety and Health [NIOSH]).

**Positive Job Placement.** CTE completers who secure a job, continue their education, or join the military.

**Safety Assessment.** An instructor developed and administered general and equipment specific safety exam. The general safety exam covers generalities across the spectrum for each program and is a written exam. The equipment specific exam has both a written and performance component for each piece of equipment to which the student has access. EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.

**Safety Environment.** Equipment and devices shall meet or exceed the minimum requirements under Section 6 of the Occupational Safety and Health Standards Act of 1970, specifically Subpart I of 29-CFR1910 and the appropriate standards published by the American National Standards Institute, the National Fire Prevention Association, and the National Institute for Occupational Safety and Health. The selection, maintenance and use of this equipment shall be governed as incorporated under Section 6 of the Act (OSHA).

**Supervised Agricultural Experience (SAE) Program.** A unique aspect of agricultural education, providing students an opportunity to apply knowledge and skills gained in the classroom to an authentic work experiences outside of the classroom in Exploratory, Research, Work Placement, and Entrepreneurship areas. Every student enrolled in an agriculture program of study is required to develop an SAE. To complete the program of study, the student must implement an SAE and keep online financial records of

all transactions using a state-approved data system. To best accommodate the SAE process, county boards of education may extend teacher contracts to ensure proper student supervision during summer months, thus extending work-based learning opportunities.

**Technical Assessment.** A business/industry-designed assessment given to CTE students to measure the attainment of career-related technical skills as it relates to their program of study.

**West Virginia College- and Career-Readiness Programs of Study/Content Skillsets (CSS).** The culminating collection of specific technical skills students should be able to accomplish after completing instruction from a state-approved CTE course, to include the particular category of craft knowledge, abilities, and experience required to perform the necessary tasks within a specific profession.

**Work-Based Learning.** Provides students with authentic work experience related to technical instruction and academic competencies.

## CTE Initiatives

### **Classroom 2 Career**

Work-based learning opportunities categorized by Career Preparation, Career Learning, and Career Experience to include, but not limited to, service learning projects, co-curricular work experience, entrepreneurial experiences, externships, internships, and apprenticeships.

### **Governor's Workforce Credential**

A credential awarded by West Virginia's Governor to CTE completers who achieve a rigorous set of standards within their state-approved CTE program of study and demonstrate exemplary performance within the emerging workforce. Graduating completers must successfully meet the established criteria as referenced in the Guidance Document of Policy 2520.13.

### **Simulated Workplace**

An instructional environment that creates a high-quality workplace culture, providing students opportunities to learn business/industry processes and procedures.

All state-approved secondary CTE programs require a shift to a workplace environment exposing students enrolled in the first and second program courses and full implementing the following required protocols in the third and fourth program courses:

- Student Led Companies,
- Application/Interview Structure,
- Formal Attendance System,
- Drug Free Work Zone,
- 6S Environments,
- Safe Work Areas,
- Workplace Teams,
- Project-Based Learning/Student Engagement,
- Company Name and Handbook,
- Company Meetings,
- Onsite Business Reviews, and
- Accountability (data review, report, and technical assessments).

## CTE Elective Courses

**CTE Middle School Programming Course Standards**

1. Students explore the 16 national career clusters.
2. Students learn technical opportunities available to them as they enter high school.
3. Students learn to make career informed decisions and manage personal career plans:
  - (a) explore job qualifications, interests, aptitudes, information, and skills necessary to succeed in a career;
  - (b) explore the scope of career opportunities and the requirements for education, training; and
  - (c) work with counselor to complete personal education plan incorporating career interests, pathways, and postsecondary possibilities.
4. Students demonstrate the proper behaviors associated with workplace etiquette and business processes.
5. Students understand effective leadership styles, key concepts of group dynamics, team and individual decision-making, the benefits of workforce diversity and conflict resolution.

**The following courses are middle school elective offerings<sup>1</sup> and are considered non-occupational:**

**0101** Introduction to Agriculture Food and Natural Resources  
**0700** Exploring Health Professions  
**0903** Parenting and Strong Families  
**0954** Foundational Food Preparation  
**0970** Future Careers  
**0971** Regional Careers  
**0972** Discover Your Future  
**1441** Keyboarding  
**1700** Technical Computer Application I  
**1893** Gateway Automation and Robotics  
**1894** Gateway Design and Modeling  
**1895** Gateway Energy and Environment  
**1896** Gateway Flight and Space  
**1897** Gateway Green Architecture  
**1898** Gateway Magic of Electrons  
**1899** Gateway Science of Technology  
**1900** Gateway Medical Detectives  
**1918** Gateway App Creators  
**1920** Gateway Computer Science for Innovators and Makers  
**2406** Middle Exploring Technology 6  
**2407** Middle Exploring Technology 7  
**2408** Middle Exploring Technology 8  
**2436** Fundamentals of Engineering  
**7630** Career Exploration  
**7664** Touring West Virginia

**CTE High School Programming Course Standards**

1. Students understand the academic content required for entry into postsecondary education and/or the workforce.
2. Students understand the principles of effective oral, written, and multimedia communication in a variety of formats and contexts.
3. Students understand how to make effective decisions, use career information, and manage personal career plans:
  - (a) explore job qualifications, interests, aptitudes, information, and skills necessary to succeed in a career;
  - (b) understand the scope of career opportunities and the requirements for education, training, and licensure within a career;
  - (c) develop a career plan that is designed to reflect career interests, pathways, and postsecondary possibilities;
  - (d) explore strategies for self-promotion in the interviewing process, such as job applications, résumé writing, interviewing skills and preparation of a portfolio.
4. Students utilize career-planning concepts, tools, and strategies to explore, obtain and/or develop a career.
5. Students understand the use of technological resources as they apply to career preparedness.
6. Students understand how to develop alternate solutions by integrating critical and creative thinking skills, such as logical reasoning, analytical thinking, and problem-solving techniques.
7. Students demonstrate the proper behaviors associated with workplace etiquette and business processes.
8. Students understand effective leadership styles, key concepts of group dynamics, team and individual decision-making, the benefits of workforce diversity and conflict resolution.

**Notes:**

- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

**The following courses are high school elective offerings and are considered non-occupational:**

- 0133** Agricultural Cooperative Education
- 0146** Leadership Development
- 0201** Grounds Maintenance
- 0234** Agricultural Experience Program 2
- 0700** Exploring Health Professions<sup>1</sup>
- 0710** Employment in Health Occupation
- 0720** ECG/Phlebotomy
- 0725** Understanding Human Behavior
- 0730** Health Science Clinical Experience
- 0736** Medical Assistant Administrative Procedures II
- 0739** Nutrition and Wellness
- 0742** Dental Assistant Clinical Practice
- 0745** Dental Assisting Clinical Mentoring
- 0747** Dental Specialties
- 0749** Supervised Dental Clinical Experience

<sup>1</sup> This is a CTE foundational offering.



<b>0929</b>	Learning for Independence Family and Employment
<b>0950</b>	Nutrition and Foods Foundation
<b>0954</b>	Foundational Food Preparation <sup>1</sup>
<b>0972</b>	Discover Your Future <sup>1</sup>
<b>0973</b>	Practical Know-How <sup>1</sup>
<b>1016</b>	Food Service Management Practices
<b>1017</b>	Culinary Nutrition and the Menu
<b>1018</b>	Baking and Pastry Applications
<b>1032</b>	Principles of Investigation
<b>1055</b>	Public Safety and Wellness
<b>1062</b>	JROTC V
<b>1063</b>	JROTC VI
<b>1064</b>	JROTC Internship
<b>1116</b>	Event Production Operations
<b>1212</b>	Event and Project Planning and Management
<b>1221</b>	Leisure Behavior
<b>1222</b>	Introduction to Recreation and Leisure
<b>1441</b>	Keyboarding <sup>1</sup>
<b>1472</b>	Principles of Entrepreneurship
<b>1518</b>	Fundamentals of Media Writings
<b>1519</b>	Information Graphics
<b>1601</b>	Basic Control Circuits
<b>1602</b>	Air Conditioning Applications
<b>1603</b>	Domestic Refrigeration
<b>1604</b>	Fossil Fuel Heating Systems
<b>1607</b>	Heating Systems
<b>1608</b>	Commercial Air Conditioning
<b>1609</b>	Ductwork Fabrication
<b>1661</b>	Blueprint Reading
<b>1672</b>	Detailing and Interior Parts
<b>1673</b>	Mechanical and Electrical Components
<b>1674</b>	Refinishing Techniques
<b>1676</b>	Custom Finishing Processes
<b>1692</b>	PC Essentials Hardware
<b>1706</b>	Imaging for the Web
<b>1718</b>	Introduction to Computer Aided Drafting
<b>1722</b>	Piping Systems
<b>1723</b>	Civil Drafting
<b>1726</b>	Structural Steel Drafting
<b>1728</b>	Advanced Computer Aided Drafting
<b>1742</b>	Diesel Equipment Electrical Systems
<b>1743</b>	Diesel Engine Tune Up and Troubleshooting
<b>1749</b>	Diesel Truck Chasses Concepts
<b>1763</b>	Fundamentals of Electricity
<b>1803</b>	Basic Plumbing and Electricity
<b>1805</b>	Fundamentals of Facilities Maintenance

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<sup>1</sup> This is a CTE foundational offering.

1820	Applications in Commercial Construction
1821	Concrete Finishing
1822	Blueprint Reading for Construction
1823	Finishing Carpentry
1824	Framing Practices and Applications
1828	Building and Construction Applications
1829	Masonry and Plumbing
1853	Fundamentals of Computer Graphics
1854	Computer Graphics
1855	Fundamentals of Desktop Publishing
1856	Desktop Publishing/Page Layout
1901	Engine Machining
1902	Machine Tool Technology
1904	Integrated Machine Processes
1906	Machining Processes and Applications
1908	CNC Machining
1911	Block and Rock Laying
1913	Bricklaying
1914	Bricklaying Applications
1916	Decorative Masonry Work
1917	Foundation and Footings
1970	Power Equipment Systems Applications
1972	Recreational Applications
1973	Compact Diesels
1974	Generators
1982	Ornamental Metalwork
1983	Blueprint Reading and Metallurgy
1987	Gas Metal Arc Welding
1989	Gas Tungsten Arc Welding
2004	Agriculture Blueprint/CAD
2006	Agriculture Intro to Oxy-Acetylene/Arc Welding
2124	Cabinet Construction
2145	Smoldering and Flaring Copper Pipe
2146	Gas Piping
2148	Drains, Waste and Vent Systems
2149	Plumbing Fixtures
2202	Fire Science Technology
2207	Telecommunicator
2208	Auto Extrication
2209	Driver/Pump Operator
2436	Fundamentals of Engineering <sup>1</sup>

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<sup>1</sup> This is a CTE foundational offering.

## CTE High School Programs of Study

## Agriculture, Food &amp; Natural Resources Career Cluster™ (AG)

Agribusiness Systems Career Pathway Standards	
<ol style="list-style-type: none"> <li>1. Apply management planning principles in AG businesses.</li> <li>2. Use record keeping to accomplish AG business objectives, manage budgets, and comply with laws and regulations.</li> <li>3. Manage cash budgets, credit budgets, and credit for an AG business using generally accepted accounting principles.</li> <li>4. Develop a business plan for an AG business.</li> <li>5. Use sales and marketing principles to accomplish AG business objectives.</li> <li>6. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.</li> </ol> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>AG0120 Agribusiness Systems</b>
<b>Program Required Courses:</b>	<p><b>0101</b> Introduction to Agriculture, Food and Natural Resources<sup>1</sup> OR <b>0161</b> CASE Introduction to Agriculture, Food and Natural Resources <b>0102</b> The Science of Agriculture <b>0134</b> Agricultural Experience Program <i>Students shall receive 1 full credit based on completion of approved SAE and submission of approved documentation. Two years must be completed to meet requirement. Refer to Guidelines to Awarding SAE Credit document for more information.</i></p> <p><b>(+Specialization)</b></p>
<b>Specialization Courses:</b>	<p><i>Must select one:</i></p> <p><b>0110</b> Agriculture Entrepreneurship <b>0111</b> Food Science Technology <b>0112</b> Fundamentals of Agriculture Mechanics <b>0132</b> Agricultural Biotechnology <b>0136</b> Advanced Principles of Agriculture <b>0139</b> Fundamentals of Animal Processing <b>0140</b> Animal Production and Management <b>0162</b> CASE Principles of AG Science – Animal <b>0163</b> CASE Agriculture Business, Research and Development <b>0164</b> CASE Animal and Plant Biotechnology <b>0165</b> CASE Food Science and Safety</p>

<sup>1</sup> This is a CTE foundational offering.

	<b>0166</b> CASE Principles of AG Science – Plant <b>0183</b> Forest Management <b>0200</b> Natural Resource Management <b>0212</b> Horticulture
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### Animal Systems Career Pathway Standards

1. Analyze historic and current trends impacting the animal systems industry.
2. Utilize best-practice protocols based upon animal behaviors for animal husbandry and welfare.
3. Design and provide proper animal nutrition to achieve desired outcomes for performance, development, reproduction, and/or economic production.
4. Apply principles of animal reproduction to achieve desired outcomes for performance, development, and/or economic production.
5. Evaluate environmental factors affecting animal performance and implement procedures for enhancing performance and animal health.
6. Classify, evaluate, and select animals based on anatomical and physiological characteristics.
7. Apply principles of effective animal health care.
8. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful program of study completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

WV CTE Program of Study:	AG0220 Animal Systems
<b>Program Required Courses:</b>	<b>0101</b> Introduction to Agriculture, Food and Natural Resources <sup>1</sup> OR <b>0161</b> CASE Introduction to Agriculture, Food and Natural Resources <b>0140</b> Animal Production and Management <b>or</b> OR <b>0162</b> CASE Principles of Agriculture Science – Animal <b>0134</b> Agricultural Experience Program <i>Students shall receive 1 full credit based on completion of approved SAE and submission of approved documentation. Two years must be completed to meet requirement. Refer to Guidelines to Awarding SAE Credit document for more information.</i> <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>0141</b> Aquaculture <b>0149</b> Companion Animal Care <b>0164</b> CASE Animal and Plant Biotechnology <b>0165</b> CASE Food Science and Safety

<sup>1</sup> This is a CTE foundational offering.

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	<b>0170</b> Introduction to Pet Grooming, Boarding and Obedience <b>0230</b> Livestock Production <b>2007</b> Equine Science
<b>WV CTE Program of Study:</b>	<b>AG0223 Pet Grooming</b>
<b>Program Required Courses:</b>	<b>0170</b> Introduction to Pet Grooming, Boarding and Obedience <b>0173</b> Pet Grooming, Boarding and Obedience Entrepreneurship <b>0171</b> Pet Grooming and Understanding Personalities <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>1180</b> Advanced Pet Grooming and Understanding Personalities <b>1181</b> Pet Boarding and Obedience

## Food Products & Processing Systems Career Pathway Standards

1. Develop and implement procedures to ensure safety, sanitation, and quality in food product and processing facilities.
2. Apply principles of nutrition, biology, microbiology, chemistry, and human behavior to the development of food products.
3. Select and process food products for storage, distribution, and consumption.
4. Explain the scope of the food industry and the historical and current developments of food products and processing.
5. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>AG0230 Animal Processing</b>
<b>Program Required Courses:</b>	<b>0101</b> Introduction to Agriculture, Food and Natural Resources <sup>1</sup> OR <b>0161</b> CASE Introduction to Agriculture, Food and Natural Resources <b>0139</b> Fundamentals of Animal Processing <b>0134</b> Agricultural Experience Program <i>Students shall receive 1 full credit based on completion of approved SAE and submission of approved documentation. Two years must be completed to meet requirement. Refer to Guidelines to Awarding SAE Credit document for more information.</i> <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>0151</b> Animal Processing – Retail <b>0160</b> Animal Processing – Plant

<sup>1</sup> This is a CTE foundational offering.

**Natural Resources Systems Career Pathway Standards**

1. Plan and conduct natural resource management activities that apply logical, reasoned, and scientifically based solutions to natural resource issues and goals.
2. Analyze the interrelationships between natural resources and humans.
3. Develop plans to ensure sustainable production and processing of natural resources.
4. Demonstrate responsible management procedures and techniques to protect or maintain natural resources.
5. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

**Notes:**

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>AG0130 Forest Industry</b>
<b>Program Required Courses:</b>	<b>0182</b> Fundamentals of Forestry <b>0183</b> Forest Management <b>0184</b> Timber Management <b>0185</b> Advanced Principles of Forestry
<b>WV CTE Program of Study</b>	<b>AG0170 Natural Resources Management</b>
<b>Program Required Courses</b>	<b>0101</b> Introduction to Agriculture, Food and Natural Resources <sup>1</sup> OR <b>0161</b> CASE Introduction to Agriculture, Food and Natural Resources <b>0200</b> Natural Resources Management <b>0134</b> Agricultural Experience Program <i>Students shall receive 1 full credit based on completion of approved SAE and submission of approved documentation. Two years must be completed to meet requirement. Refer to Guidelines to Awarding SAE Credit document for more information.</i> <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>0183</b> Forest Management <b>0190</b> Fish and Wildlife Management <b>2494</b> Land Management and Surveying <b>2498</b> Arboriculture and Urban Forestry

**Plant Systems Career Pathway Standards**

1. Develop and implement a crop management plan for a given production goal that accounts for environmental factors.
2. Apply the principles of classification, plant anatomy, and plant physiology to plant production and

<sup>1</sup> This is a CTE foundational offering.

management. 3. Propagate, culture, and harvest plants and plant products based on current industry standards. 4. Apply principles of design in plant systems to enhance an environment (i.e., floral, forest, landscape, and farm). 5. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.	
<b>Notes:</b> <ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>AG0210 Plant Systems</b>
<b>Program Required Courses:</b>	<b>0101</b> Introduction to Agriculture, Food and Natural Resources <sup>1</sup> OR <b>0161</b> CASE Introduction to Agriculture, Food and Natural Resources <b>0212</b> Horticulture OR <b>0166</b> CASE Principles of Agricultural Science – Plant <b>0134</b> Agricultural Experience Program <i>Students shall receive 1 full credit based on completion of approved SAE and submission of approved documentation. Two years must be completed to meet requirement. Refer to Guidelines to Awarding SAE Credit document for more information.</i> <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>0164</b> CASE Animal and Plant Biotechnology <b>0165</b> CASE Food Science and Safety <b>0213</b> Floriculture <b>0214</b> Greenhouse Production and Management <b>0220</b> Fruit and Vegetable Production <b>0240</b> Turf and Landscape Systems

### Power, Structural & Technical Systems Career Pathway Standards

1. Apply physical science principles and engineering applications to solve problems and improve performance in AG power, structural, and technical systems.
2. Operate and maintain AG mechanical equipment and power systems.
3. Service and repair AG mechanical equipment and power systems.
4. Plan, build, and maintain AG structures.
5. Use control, monitoring, geospatial, and other technologies in AG power, structural, and technical systems.
6. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based

<sup>1</sup> This is a CTE foundational offering.

service projects to enhance leadership opportunities.	
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>AG0110 Power, Structural and Technical Systems</b>
<b>Program Required Courses:</b>	<p><b>0101</b> Introduction to Agriculture, Food and Natural Resources<sup>1</sup> OR <b>0161</b> CASE Introduction to Agriculture, Food and Natural Resources <b>0112</b> Fundamentals of Agriculture Mechanics <b>0134</b> Agricultural Experience Program</p> <p><i>Students shall receive 1 full credit based on completion of approved SAE and submission of approved documentation. Two years must be completed to meet requirement. Refer to Guidelines to Awarding SAE Credit document for more information.</i></p> <p><b>(+Specialization)</b></p>
<b>Specialization Courses:</b>	<p><i>Must select one:</i></p> <p><b>0113</b> Agriculture Structures <b>0114</b> Agriculture Equipment and Repair <b>0115</b> Agriculture Engineering <b>2002</b> Agriculture Small Engine Repair</p>

### Architecture & Construction Career Cluster™ (AR)

Construction Career Pathway Standards
<ol style="list-style-type: none"> <li>1. Describe contractual relationships between all parties involved in the building process.</li> <li>2. Describe the approval procedures required for successful completion of a construction project.</li> <li>3. Implement testing and inspection procedures to ensure successful completion of a construction project.</li> <li>4. Apply scheduling practices to ensure the successful completion of a construction project.</li> <li>5. Apply practices and procedures required to maintain jobsite safety.</li> <li>6. Manage relationships with internal and external parties to successfully complete construction projects.</li> <li>7. Compare and contrast the building systems and components required for a construction project.</li> <li>8. Demonstrate the construction crafts required for each phase of a construction project.</li> <li>9. Safely use and maintain appropriate tools, machinery, equipment, and resources to accomplish construction project goals.</li> <li>10. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.</li> </ol>

<sup>1</sup> This is a CTE foundational offering.



**Notes:**

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

**WVDE requirements to be eligible to sit for the Electrical Journeyman License:**

- *Attain an overall grade of "B" or better in the four required state-approved CTE Electrical Technician Program of Study required courses **AND** four specialization courses used to meet the 1080 hours needed to sit for the Journeyman License as stated in the Electrician Licensing Rules from the West Virginia State Fire Marshall's office;*
- *Attain a verified school attendance record of no more than 6 days absent in a 1 year - 1,080 hour program or 12 days absent in a two year - 1,080 hour program;*
- *Earn the OSHA 10 certification;*
- *Pass a minimum of TWO documented drug screenings; and*
- *Score at or above the Workforce Entry-Level cut score on the industry-recognized written **AND** satisfactorily pass a school identified performance assessment.*

<b>WV CTE Program of Study:</b>	<b>AR1820 Carpentry</b>
<b>Program Required Courses:</b>	<b>1842</b> Carpentry I <b>1843</b> Carpentry II <b>1844</b> Carpentry III <b>1845</b> Carpentry IV
<b>WV CTE Program of Study:</b>	<b>AR1760 Electrical Technician</b>
<b>Program Required Courses:</b>	<b>1756</b> Electrical Trades I <b>1757</b> Electrical Trades II <b>1758</b> Electrical Trades III <b>1759</b> Electrical Trades IV
<b>Journeyman Required Courses:</b>	<i>Must complete at least four of the below listed courses to meet the 1080 hour requirement and be recommended to sit for the Journeyman Electrician License exam:</i> <b>1762</b> Blueprint Reading for Electricians <b>1765</b> Industrial and Commercial Wiring <b>1766</b> Integrated Electrical Lab <b>1767</b> National Electrical Code <b>1769</b> Residential Wiring <b>1771</b> Rotating Devices and Control Circuitry
<b>WV CTE Program of Study:</b>	<b>AR1910 Masonry</b>
<b>Program Required Courses:</b>	<b>1846</b> Masonry I <b>1847</b> Masonry II <b>1848</b> Masonry III <b>1849</b> Masonry IV
<b>WV CTE Program of Study:</b>	<b>AR2140 Plumbing</b>
<b>Program Required Courses:</b>	<b>2081</b> Plumbing I <b>2082</b> Plumbing II <b>2083</b> Plumbing III <b>2084</b> Plumbing IV

**Design/Pre-construction Career Pathway Standards**

1. Justify design solutions through the use of research documentation and analysis of data.
2. Use effective communication skills and strategies (listening, speaking, reading, writing, and graphic communications) to work with clients and colleagues.
3. Describe the requirements of the integral systems that impact the design of buildings.
4. Apply building codes, laws, and rules in the project design.
5. Identify the diversity of needs, values, and social patterns in project design, including accessibility standards.
6. Apply the techniques and skills of modern drafting, design, engineering, and construction to projects.
7. Employ appropriate representational media to communicate concepts and project design.
8. Apply standards, applications, and restrictions pertaining to the selection and use of construction materials, components, and assemblies in the project design.
9. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

**Notes:**

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>AR1720 Computer Aided Drafting and Design</b>
<b>Program Required Courses:</b>	<b>1729</b> Fundamentals of Drafting <b>1727</b> Drafting Techniques <b>1725</b> Mechanical Drafting <b>1721</b> Architectural Drafting

**Maintenance/Operations Career Pathway Standards**

1. Recognize and employ universal construction signs and symbols to function safely in the workplace.
2. Use troubleshooting procedures when solving a maintenance problem in buildings.
3. Apply construction skills when repairing, restoring, or renovating existing buildings.
4. Determine work required to repair or renovate an existing building.
5. Plan and practice preventative maintenance activities to service existing buildings.
6. Maintain and inspect building systems to achieve safe and efficient operation of buildings.
7. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

**Notes:**

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>AR1800 Building Maintenance and Operations</b>
<b>Program Required Courses:</b>	<b>1774</b> Building Maintenance and Operations I <b>1775</b> Building Maintenance and Operations II <b>1776</b> Building Maintenance and Operations III <b>1777</b> Building Maintenance and Operations IV
<b>WV CTE Program of Study:</b>	<b>AR1600 HVAC Technician</b>
<b>Program Required Courses:</b>	<b>1752</b> HVAC I <b>1753</b> HVAC II <b>1754</b> HVAC III <b>1755</b> HVAC IV

### Arts, A/V Technology & Communications Career Cluster™ (AV)

<b>Journalism &amp; Broadcasting Career Pathway Standards</b>	
<ol style="list-style-type: none"> <li>Describe the diversity of functions within the Journalism &amp; Broadcasting Career Pathway.</li> <li>Demonstrate writing processes used in journalism and broadcasting.</li> <li>Plan and deliver a media production (i.e., broadcast, video, Internet, and mobile).</li> <li>Demonstrate technical support related to media production (i.e., broadcast, video, Internet, and mobile).</li> <li>Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.</li> </ol> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li><i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li><i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li><i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>AV1680 Broadcasting Technology</b>
<b>Program Required Courses:</b>	<b>1681</b> Fundamentals of Broadcasting <b>1683</b> Radio Broadcasting Presentations <b>1685</b> Television Production Applications <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>1687</b> Broadcast Operations <b>1689</b> Producing Live TV <b>1684</b> Video Editing
<b>WV CTE Program of Study:</b>	<b>AV1684 Multimedia Publishing</b>
<b>Program Required Courses:</b>	<b>1514</b> Introduction to Visual Communication <b>1515</b> Digital Photography <b>1516</b> Videography <b>1517</b> Cross-Media Publishing

<b>Visual Arts Career Pathway Standards</b>	
<ol style="list-style-type: none"> <li>Describe the history and evolution of the visual arts and its role in and impact on society.</li> <li>Analyze how the application of visual arts elements and principles of design communicate and</li> </ol>	

express ideas.	
3. Analyze and create two- and three-dimensional visual art forms using various media.	
4. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.	
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>AV1850 Graphic Design</b>
<b>Program Required Courses:</b>	<b>1857</b> Fundamentals of Graphic Design <b>1851</b> Fundamentals of Illustration <b>1859</b> Graphic Design Applications <b>1861</b> Illustration

### Business Management & Administration Career Cluster™ (BM)

Administrative Support Career Pathway Standards	
1. Plan, staff, lead and organize human resources to enhance employee productivity and satisfaction. 2. Access, evaluate and disseminate information for business decision making. 3. Plan, monitor, and manage day-to-day business activities. 4. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.	
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<i>*Business Computer Applications I (1411) is a prerequisite for Business Computer Applications II (1413)</i>	
<b>WV CTE Program of Study:</b>	<b>BM1467 Administrative Support</b>
<b>Program Required Courses</b>	<b>1411</b> Business Computer Applications I <b>1449</b> Office Procedures <b>1413</b> Business Computer Applications II*
	<b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>1409</b> Business Communications <b>1421</b> Business Recordkeeping <b>1451</b> Personal Finance
<b>WV CTE Program of Study:</b>	<b>BM1510 Principles of Business</b>
<b>Program Required Courses</b>	<b>1411</b> Business Computer Application I <b>1417</b> Business Law and Ethics

	<b>1439 Business and Marketing Essentials (+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>1445</b> Management and Entrepreneurship <b>1451</b> Personal Finance <b>1464</b> E-Commerce and Financials
<b>WV CTE Program of Study:</b>	<b>BM0510 Career and Work Skills Training (CWST)</b>
<b>Program Required Courses</b>	<b>0511</b> Career and Work Skills Training I <b>0512</b> Career and Work Skills Training II <b>0513</b> CWST Work Experience I <b>0514</b> CWST Work Experience II
<b>WV CTE Program of Study:</b>	<b>BM1950 Entrepreneurship &amp; Innovation</b>
<b>Program Required Courses</b>	<b>1474</b> Entrepreneurship I <b>1475</b> Entrepreneurship II <b>1476</b> Entrepreneurship III <b>1477</b> Entrepreneurship IV

### Education & Training Career Cluster™ (ED)

Teaching/Training Career Pathway Standards	
<ol style="list-style-type: none"> <li>1. Use foundational knowledge of subject matter to plan and prepare effective instruction and design courses or programs.</li> <li>2. Employ knowledge of learning and developmental theory to describe individual learners.</li> <li>3. Use content knowledge and skills of instruction to develop standards-based goals and assessments.</li> <li>4. Identify materials and resources needed to support instructional plans.</li> <li>5. Establish a positive climate to promote learning.</li> <li>6. Identify motivational, social, and psychological practices that guide personal conduct.</li> <li>7. Demonstrate organizational and relationship building skills used to manage instructional activities and related procedures.</li> <li>8. Demonstrate flexibility and adaptability in instructional planning.</li> <li>9. Utilize assessment and evaluation tools and data to advance learner achievement and adjust instructional plans.</li> <li>10. Evaluate teaching and training performance indicators to determine and improve effectiveness of instructional practices and professional learning.</li> <li>11. Implement strategies to maintain relationships with others to increase support for the organization.</li> <li>12. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.</li> </ol>	
<b>Notes:</b> <ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance</i></li> </ul>	

<p><i>Document of Policy 2520.13.</i></p> <p><i>*Early Learning Child Development (1321) and Early Learning Special Needs Inclusion (1322) are prerequisites for Early Learning Language &amp; Literacy (1323) and Early Learning Numeracy (1324).</i></p>	
<b>WV CTE Program of Study:</b>	<b>ED1320 Early Childhood Classroom Assistant Teacher (ECCAT)</b>
<b>Program Required Courses:</b>	<p><b>1321</b> Early Learning Child Development</p> <p><b>1322</b> Early Learning Special Needs Inclusion</p> <p><b>1323</b> Early Learning Language &amp; Literacy*</p> <p><b>1324</b> Early Learning Numeracy*</p>

### Finance Career Cluster™ (FI)

Business Financial Management Career Pathway Standards	
<ol style="list-style-type: none"> <li>Describe and follow laws and regulations to manage business operations and transactions.</li> <li>Utilize accounting tools, strategies, and systems to plan, monitor, manage, and maintain the use of financial resources.</li> <li>Process, evaluate, and disseminate financial information to assist business decision making.</li> <li>Utilize career-planning concepts, tools, and strategies to explore, obtain, and/or develop an accounting and finance careers.</li> <li>Describe and follow laws and regulations to manage accounting operations and transactions.</li> <li>Manage the use of financial resources to ensure business stability.</li> <li>Employ risk-management strategies and techniques in corporate finance to minimize business loss.</li> <li>Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.</li> </ol>	
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li><i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li><i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li><i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> <li><i>Introduction to Finances (1470) is a prerequisite for Finance Management (1471).</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>FI1410 Accounting and Finance</b>
<b>Program Required Courses:</b>	<p><b>1470</b> Introduction to Finance</p> <p><b>1401</b> Accounting Principles I</p> <p><b>1403</b> Accounting Principles II</p> <p><b>(+Specialization)</b></p>
<b>Specialization Courses:</b>	<p><i>Must select one:</i></p> <p><b>1421</b> Business Recordkeeping</p> <p><b>1451</b> Personal Finance</p> <p><b>1471</b> Financial Management</p>

### Government & Public Administration Career Cluster™ (GO)

National Security Career Pathway Standards	
<ol style="list-style-type: none"> <li>Instruct persons who will perform tasks relating to national homeland security.</li> </ol>	

2. Describe the appropriate duties, responsibilities, and authority of a national security agency's personnel at all levels.
3. Describe the leadership characteristics necessary to ensure compliance with rules of engagement and applicable ethical standards.
4. Collect and analyze information from within and outside the U.S. to assess threats and opportunities regarding national security.
5. Develop strategies to defend against and respond to the effects of chemical, biological, radiological, nuclear, or other emergent events.
6. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

**Notes:**

- *JROTC is a cooperative effort between the U.S. Department of Defense and the WVDE.*
- *JROTC cadets who successfully pass JROTC I and JROTC II courses will fulfill the 1 credit Physical Education graduation requirement.*
- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>GO1070 JROTC</b>
<b>Program Required Courses:</b>	<b>1065</b> JROTC I <b>1066</b> JROTC II <b>1080</b> JROTC III <b>1081</b> JROTC IV

**Health Science Career Cluster™ (HE)****Biotechnology Research & Development Career Pathway Standards**

1. Summarize the goals of biotechnology research and development within legal and ethical protocols.
2. Apply the fundamentals of biochemistry, cell biology, genetics, mathematical concepts, microbiology, molecular biology, organic chemistry, and statistics to conduct effective biotechnology research and development of products.
3. Demonstrate basic knowledge of recombinant DNA, genetic engineering, bioprocessing, monoclonal antibody production, nanotechnology, bioinformatics, genomics, proteomics, and transcriptomics to conduct biotechnology research and development.
4. Demonstrate the principles of solution preparation, sterile techniques, contamination control, and measurement and calibration of instruments used in biotechnology research.
5. Determine processes for product design and production and how that work contributes to an understanding of the biotechnology product development process.
6. Summarize and explain the larger ethical, moral, and legal issues related to biotechnology research, product development and use in society.
7. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

**Notes:**

<ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> <li>• <i>WVDE recommends each course must be passed with 80% or higher to move on the next course. Each program of study should have their own grading policy listed in their handbook.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>HE0780 Biomedical Science</b>
<b>Program Required Courses:</b>	<b>0727</b> Principles of Biomedical Science <b>0766</b> Human Body Systems <b>0780</b> Medical Interventions <b>0795</b> Biomedical Innovation

### Therapeutic Services Career Pathway Standards

1. Utilize communication strategies to answer patient/client questions and concerns on planned procedures and goals.
2. Communicate patient/client information among healthcare team members to facilitate a team approach to patient care.
3. Utilize processes for assessing, monitoring, and reporting patient's/clients' health status to the treatment team within protocol and scope of practice.
4. Evaluate patient/client needs, strengths and problems in order to determine if treatment goals are being met.
5. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*
- *WVDE recommends each course must be passed with 80% or higher to move on the next course. Each program of study should have their own grading policy listed in their handbook.*
- *Health Science Clinical Experience (0730) may be scheduled in conjunction with 0756, 0772, 0732, 0733, 0789, 0790, 0810, and 0825 to create a two-block credit*

*\*Foundations of Health Science (0711) is a prerequisite for Advanced Principles of Health Science (0715). These two courses provide the introductory core for all Health Science programs of study.*

*\*\*These courses require 100% drug testing prior to entering clinical experiences.*

<b>WV CTE Program of Study:</b>	<b>HE0715 Allied Health Sciences</b>
<b>Program Required Courses:</b>	<b>0711</b> Foundations of Health Science* <b>0715</b> Advanced Principles of Health Science* <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one specialization area and complete in the two courses to be a completer:</i> <b>Medical Laboratory Technician</b> <b>0755</b> Medical Laboratory and Diagnostic Procedures



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	<p><b>0756</b> Medical Laboratory Diagnostic Procedures and Applications **</p> <p><b>or Emergency Services</b></p> <p><b>0792</b> Emergency Services 1</p> <p><b>0732</b> Emergency Services 2**</p> <p><b>or Medical Assisting</b></p> <p><b>0737</b> Medical Assistant Laboratory and Diagnostic Procedures</p> <p><b>0733</b> Medical Assistance Clinical**</p> <p><b>or Clinical Diagnostics</b></p> <p><b>0810</b> Electrocardiograph Technician</p> <p><b>0825</b> Phlebotomy Skills**</p> <p><b>or PTCP Prep</b></p> <p><b>0771</b> PTCB Preparation</p> <p><b>0772</b> PTCB Clinical Applications**</p>
<b>WV CTE Program of Study:</b>	<b>HE0723 Therapeutic Services</b>
<b>Program Required Courses:</b>	<p><b>0711</b> Foundations of Health Science*</p> <p><b>0715</b> Advanced Principles of Health Science*</p> <p><b>0789</b> Clinical Specialties I** <i>Select 1 (from the specialties below)</i></p> <p><b>0790</b> Clinical Specialties II** <i>Select 1 (from the specialties below)</i></p> <p><b>(+Specialty)</b></p>
<b>Specialty:</b>	<p><i>Must select one specialty:</i></p> <ul style="list-style-type: none"> <li>• Health Occupations</li> <li>• Certified Nursing Assistant</li> <li>• Certified ECG Technician</li> <li>• Certified Health Unit Coordinator</li> <li>• Certified Patient Care Technician</li> <li>• Certified Phlebotomy Technician</li> <li>• Community Emergency Response Team</li> <li>• Dental Aide</li> <li>• Dietary Aide</li> <li>• Direct Care Worker</li> <li>• Electronic Health Record Specialist</li> <li>• Environmental Services</li> <li>• Orientation to Practical Nursing</li> <li>• Laundry Aide</li> <li>• Physical Therapy Aide</li> <li>• Pre-Pharmacy Technician</li> <li>• Imagery Aide</li> </ul>
<b>WV CTE Program of Study:</b>	<b>HE0700 Dental Assisting</b>
<b>Program Required Courses:</b>	<p><b>0740</b> Dental Assisting I</p> <p><b>0748</b> Dental Assisting II</p> <p><b>0746</b> Dental Science</p> <p><b>0743</b> Dental Assisting Clinical Practice**</p>
<b>WV CTE Program of Study:</b>	<b>HE0800 Sports Medicine</b>
<b>Program Required Courses:</b>	<b>0840</b> Foundations of Sports Medicine

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	<b>0841</b> Advanced Principles of Sports Medicine <b>0842</b> Athletic Injury Recognition and Prevention <b>0843</b> Practical Applications of Sports Medicine**
<b>WV CTE Program of Study:</b>	<b>HE1010 Advanced Medical Preparedness</b>
<b>Program Required Courses:</b>	<b>0711</b> Foundations of Health Science* <b>0715</b> Advanced Principles of Health Science*
<b>Specialization Course:</b>	<i>Must select two.</i> <b>0716</b> Body Structures and Functions <b>0721</b> Medical Terminology <b>0850</b> Medical Math <b>0734</b> Introduction to Pharmacology

## Hospitality & Tourism Career Cluster™ (HO)

### Restaurants & Food/ Beverage Services Career Pathway Standards

1. Describe ethical and legal responsibilities in food and beverage service facilities.
2. Demonstrate safety and sanitation procedures in food and beverage service facilities.
3. Use information from cultural and geographical studies to guide customer service decisions in food and beverage service facilities.
4. Demonstrate leadership qualities and collaboration with others.
5. Research costs, pricing, market demands, and marketing strategies to manage profitability in food and beverage service facilities.
6. Explain the benefits of the use of computerized systems to manage food service operations and guest service.
7. Utilize technical resources for food services and beverage operations to update or enhance present practice.
8. Implement standard operating procedures related to food and beverage production and guest service.
9. Describe career opportunities and qualifications in the restaurant and food service industry.
10. Apply listening, reading, writing, and speaking skills to enhance operations and customer service in food and beverage service facilities.
11. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>HO1015 Baking and Pastry</b>
<b>Program Required Courses:</b>	<b>1980</b> Baking & Pastry Foundations <b>1024</b> Baking and Pastry I <b>1025</b> Baking and Pastry II <b>1026</b> Baking and Pastry Advanced
<b>WV CTE Program of Study:</b>	<b>HO1010 ProStart Restaurant Management</b>

<b>Program Required Courses:</b>	<b>1013</b> Restaurant and Culinary Foundations <b>1014</b> Restaurant Management Essentials <b>1019</b> Advanced Principles in Food Production <b>1020</b> Restaurant Professional
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### Travel & Tourism Career Pathway Standards

1. Apply information about time zones, seasons, and domestic and international maps to create or enhance travel.
2. Apply unit and time conversion skills to develop travel schedules and compute cost, distance, and time (including travel time) factors.
3. Analyze cultural diversity factors to enhance travel planning.
4. Assess the potential (real and perceived) hazards related to multiple environments, and recommend appropriate safety, health, and security measures for travelers.
5. Develop a safety and security plan containing proactive and reactive solutions to manage emergency situations for travelers and staff.
6. Use common travel and tourism terminology used to communicate within the industry.
7. Customize travel with diverse transportation, lodging, cruise, and food options.
8. Compare and contrast services and products from related industries to understand and evaluate how they impact the delivery of travel and tourism products and services to customers.
9. Identify the community elements necessary to maintain cooperative tourism development efforts.
10. Develop a travel product that matches customer needs, wants, and expectations.
11. Design promotional packages to effectively market travel and tourism.
12. Select the most effective communication technique and media venue to convey travel marketing information to a target audience.
13. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>HO1210 Hospitality and Tourism</b>
<b>Program Required Courses:</b>	<b>1211</b> Introduction to Hospitality and Tourism <b>7663</b> Travel West Virginia <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one specialization area and complete two of the specialization courses to be a completer:</i> <b>Recreation and Adventure Tourism</b> <b>0438</b> Adventure Tourism <b>1086</b> Outdoor Education <b>1125</b> Parks and Recreation Program Management <b>1210</b> Hospitality and Tourism Internship <b>or Hospitality Management</b> <b>1240</b> Hospitality and Tourism Leadership

## Human Services Career Cluster™ (HU)

**Family & Community Services Career Pathway Standards**

1. Use formal and informal assessment practices to create and evaluate a prevention and/or treatment plan.
2. Identify community resources to provide family and community services.
3. Communicate effectively to gain support from the client's family and other support groups.
4. Comply with laws and procedures that govern abuse, neglect, confidentiality, and other health and safety situations.
5. Evaluate crisis prevention, intervention, and resolution techniques to formulate emergency plans.
6. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

**Notes:**

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>HU1025 Human Services</b>
<b>Program Required Courses:</b>	<b>0928</b> Fundamentals of Human Services <b>0904</b> Human Development <b>1070</b> Practical Applications of Social Services <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>1071</b> Seminar in Human Services <b>1060</b> Essentials of Addiction and Prevention <b>0903</b> Parenting and Strong Families <sup>1</sup>

**Consumer Services Career Pathway Standards**

1. Examine consumer services laws and ethics to prepare for state licensure.
2. Engage in conversations and correspondence in American Sign Language (ASL) to provide and obtain information, express feelings and emotions, and exchange opinions.
3. Comprehend and interpret live and recorded ASL on a variety of topics.
4. Present information, concepts, and ideas in ASL to an audience of viewers on a variety of topics.
5. Demonstrate an understanding of the relationship between the practices and perspectives of American deaf culture.
6. Acquire information and recognize the distinctive viewpoints that are only available through ASL and deaf culture.
7. Demonstrate understanding of the nature of language through comparisons of ASL and a student's own language.
8. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based

<sup>1</sup> This is a CTE foundational offering.

service projects to enhance leadership opportunities.

**Notes:**

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>HU1035 Sign Language Interpreter</b>
<b>Program Required Courses:</b>	<b>0300</b> Sign Language Interpreter I <b>0301</b> Sign Language Interpreter II <b>0302</b> Sign Language Interpreter III <b>0303</b> Sign Language Interpreter IV

**Personal Care Services Career Pathway Standards**

1. Analyze basic principles of biology, chemistry, and human anatomy for safe and effective utilization and selection of personal care products and services.
2. Evaluate an individualized personal care plan that reflects client preferences, needs, and interests for a course of treatment/action.
3. Utilize data and information to maintain electronic records of client services and make recommendations for personal care services.
4. Demonstrate policies and procedures to achieve a safe and healthy environment for personal care services.
5. Develop organizational policies, procedures, and regulations that establish personal care organization priorities, accomplish the mission, and provide high-quality service to a diverse set of clients and families.
6. Identify personal care business opportunities enhanced by community involvement, self-improvement, and current trends.
7. Apply methods of obtaining feedback to understand expectations and promote high-quality personal care services standards.
8. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

**Notes:**

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>HU2311 Pre-Cosmetology</b>
<b>Program Required Courses:</b>	<b>1737</b> Barbering and Cosmetology Foundations <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one specialization area and complete the specialization courses to be a completer:</i> <b>Aesthetics</b> <b>1732</b> Skin Sciences I <b>1731</b> Aesthetics Science

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	<b>1714</b> General Aesthetics <b>or Nail Technology</b> <b>1716</b> Nail Technology Science and Procedure <b>1717</b> Art of Nail Technology <b>1719</b> Nail Technology Clinical Experience <b>or Hair Stylist</b> <b>1734</b> Cosmetology Professional I <b>1735</b> Cosmetology Professional II <b>1736</b> Cosmetology Professional Advanced
<b>Licensing Required Courses:</b>	<i>Select the four courses listed below to complete the Minimum Requirements for Hair Stylist by the Board of Barbers and Cosmetologists:</i> <b>1738</b> Cosmetology Science I <b>1740</b> Cosmetology Science II <b>1730</b> Cosmetology Chemical <b>1750</b> Cosmetology Chemicals II
	<i>Select the course listed below to complete the Minimum Requirements for Aesthetics by the Board of Barbers and Cosmetologists:</i> <b>1739</b> General Aesthetics II

**Information Technology Career Cluster™ (IT)**

<b>Computer Programming &amp; Software Development Career Pathway Standards</b>	
<ol style="list-style-type: none"> <li>Analyze customer software needs and requirements.</li> <li>Demonstrate the use of industry standard strategies and project planning to meet customer specifications.</li> <li>Analyze system and software requirements to ensure maximum operating efficiency.</li> <li>Demonstrate the effective use of software development tools to develop software applications.</li> <li>Apply an appropriate software development process to design a software application.</li> <li>Program a computer application using the appropriate programming language.</li> <li>Demonstrate software testing procedures to ensure quality products.</li> <li>Perform quality assurance tasks as part of the software development cycle.</li> <li>Perform software maintenance and customer support functions.</li> <li>Design, create, and maintain a database.</li> <li>Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.</li> </ol> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li><i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li><i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li><i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>IT2215 Computer Science</b>
<b>Program Required Courses:</b>	<b>1408</b> Computer Science Essentials <b>2806</b> Computer Science Principles

<b>2801</b>	Computer Science Applications
<b>1418</b>	Cybersecurity

### Information Support & Services Career Pathway Standards

1. Provide technology support to maintain service.
2. Manage operating systems and software applications, including maintenance of upgrades, patches, and service packs.
3. Apply appropriate troubleshooting techniques in resolving computer hardware, software, and configuration problems.
4. Perform installation, configuration, and maintenance of operating systems.
5. Demonstrate the use of networking concepts to develop a network.
6. Evaluate the effectiveness of an information system.
7. Employ system installation and maintenance skills to setup and maintain an information system.
8. Employ system administration and control skills to monitor the performance of an information system.
9. Employ technical writing and documentation skills in support of an information system.
10. Apply quality assurance processes to maximize information system operation.
11. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>IT2210 Informatics</b>
<b>Program Required Courses:</b>	<b>1550</b> AC Informatics I <b>1551</b> AC Informatics II <b>1552</b> AC Informatics III <b>1553</b> AC Informatics IV

### Interactive Media Pathway Standards

1. Analyze customer requirements to design and develop a web or digital communication product.
2. Apply the design and development process to produce user-focused Web and digital communications solutions.
3. Write product specifications that define the scope of work aligned to customer requirements.
4. Demonstrate the effective use of tools for digital communication production, development, and project management.
5. Develop, administer, and maintain web applications.
6. Design, create, and publish a digital communication product based on customer needs.
7. Evaluate the functionality of a digital communication product using industry accepted techniques and metrics.
8. Implement quality assurance processes to deliver quality digital communication products and services.
9. Perform maintenance and customer support functions for digital communication products.
10. Comply with intellectual property and copyright laws and ethical practices when creating

web/digital communications.	
11. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.	
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>IT1442 Coding, App and Game Design</b>
<b>Program Required Courses:</b>	<b>1431</b> Digital Imaging / Multimedia I <b>1432</b> Digital Imaging / Multimedia II <b>1456</b> Coding, App and Game Design I <b>1457</b> Coding, App and Game Design II
<b>WV CTE Program of Study:</b>	<b>IT1450 Information Management</b>
<b>Program Required Courses</b>	<b>1700</b> Technical Computer Applications I <sup>1</sup> <b>1709</b> Technical Computer Applications II <b>1431</b> Digital Imaging/Multimedia I
	<b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>1429</b> Desktop Publishing <b>1445</b> Management and Entrepreneurship <b>1705</b> Fundamentals of Computer Science
<b>WV CTE Program of Study:</b>	<b>IT1445 Virtual Simulation and Game Development</b>
<b>Program Required Courses:</b>	<b>1431</b> Digital Imaging/Multimedia I <b>1455</b> Web Page Publishing <b>1465</b> Game Design I Virtual <b>1466</b> Game Design II Virtual

### Network Systems Career Pathway Standards

1. Analyze customer or organizational network system needs and requirements.
2. Analyze wired and wireless network systems to determine if they meet specifications (i.e., IEEE, power, and security).
3. Design a network system using technologies, tools, and standards.
4. Perform network system installation and configuration.
5. Perform network administration, monitoring and support to maintain a network system.
6. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>IT1640 CISCO Networking Academies</b>
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<b>Program Required Courses:</b>	<b>1654</b> CCNA1 <b>1658</b> CCNA2 <b>1659</b> CCNA3 <b>1660</b> CCNA4
<b>WV CTE Program of Study:</b>	<b>IT1680 Computer Systems Repair Technology</b>
<b>Program Required Courses:</b>	<b>1664</b> CompTIA A+ Core 1 <b>1665</b> CompTIA A+ Core 2 <b>1694</b> Networking+ <i>(+Specialization)</i>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>1695</b> Server + <b>1696</b> Security + <b>1698</b> Linux Essentials

<sup>1</sup> This is a CTE foundational offering.

### Law, Public Safety, Corrections & Security Career Cluster™ (LA)

#### Emergency and Firefighting Management Services Career Pathway Standards

1. Compare and contrast relevant aspects of different career fields available for professionals in fire and emergency management.
2. Execute protocols for handling emergency situations that range from minor medical and fire emergencies to area-wide incidents to demonstrate the application and enhancement of key skills used to respond effectively in such instances.
3. Execute operational and repair requirements when using equipment in order to maintain functional equipment ready for use in fire and medical emergency situations.
4. Examine equipment and summarize the various applications for equipment commonly used in emergency and fire management services.
5. Design and implement an appropriate Incident Command System to assure the effective management of logistical procedures at an incident scene.
6. Recognize materials as hazardous using common codes and icons used in the fire and emergency management environment.
7. Analyze and summarize hazardous materials transportation modes in order to assure the safe transport of substances from fire and emergency scenes.
8. Implement public relations plans involving key community audiences and the local fire and emergency management facilities in order to enhance public awareness and safety in fire and emergency situations.
9. Examine and summarize the various elements and issues involved in using Preparedness and Response Systems during disaster situations in order to demonstrate understanding of the systems available for managing large scale disasters.
10. Examine and summarize the key functions and techniques of critical infrastructure protection to assure protection of potential targets for terrorism and/or natural disasters.
11. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*

- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>LA2200 Emergency and Firefighting Management Services</b>
<b>Program Required Courses:</b>	<b>2203</b> Fire Fighting I <b>2205</b> Fire Fighting II <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one specialization area and complete the specialization courses to be a completer:</i> <b>Industrial Fire Safety</b> <b>2250</b> Industrial Incident Command <b>2251</b> Industrial Hazardous Material <b>or Emergency Management</b> <b>2248</b> Emergency Medical Preparedness I <b>2249</b> Emergency Medical Preparedness II

#### Law Enforcement Services Career Pathway Standards

1. Demonstrate knowledge of appropriate techniques for managing crisis situations in order to maintain public safety.
2. Demonstrate knowledge of protocols and procedures designed for handling and managing domestic violence, motor vehicle traffic stops, explosive and hazardous materials incidents, crime scenes, and evidence collection.
3. Describe and perform protocols and procedures designed to safely transport a person in custody.
4. Understand and demonstrate techniques and protocols for effectively and safely responding to crimes in progress in order to ensure individual and public safety.
5. Execute protocols and procedures involved with juvenile victims and offenders in order to protect their rights.
6. Investigate and document a motor vehicle accident in compliance with prescribed procedures.
7. Evaluate situations that require the use of force and demonstrate the appropriate level of force necessary.
8. Demonstrate the ability to recognize the signs and symptoms of possible child abuse and neglect.
9. Examine and summarize the various law enforcement issues involved in Preparedness and Response Systems for disaster and potential terrorist situations.
10. Demonstrate knowledge of Victims' Rights and procedures for protecting them.
11. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>LA1020 Law and Public Safety</b>
<b>Program Required Courses:</b>	<b>1225</b> Fundamentals of Public Safety Leadership

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	<b>1226</b> Ethical Issues in Public Safety <b>1039</b> Practical Applications of Public Safety <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one:</i> <b>1034</b> Seminar in Corrections <b>1035</b> Seminar in Law Enforcement <b>1037</b> Strategic Security and Protection <b>1031</b> Seminar in Courts and Legal System

### Manufacturing Career Cluster™ (MA)

Maintenance, Installation, & Repair Career Pathway Standards	
<ol style="list-style-type: none"> <li>1. Demonstrate maintenance skills and proficient operation of equipment to maximize manufacturing performance.</li> <li>2. Demonstrate the safe use of manufacturing equipment to ensure a safe and healthy environment.</li> <li>3. Diagnose equipment problems and effectively repair manufacturing equipment.</li> <li>4. Investigate and employ techniques to maximize manufacturing equipment performance.</li> <li>5. Implement a preventative maintenance schedule to maintain manufacturing equipment, tools, and workstations.</li> <li>6. Implement an effective, predictive, and preventive manufacturing equipment maintenance program.</li> <li>7. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.</li> </ol> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>MA1870 Industrial Equipment Maintenance</b>
<b>Program Required Courses:</b>	<b>1873</b> Fundamentals of Industrial Equipment Maintenance <b>1875</b> Hydraulic and Pneumatic Systems <b>1871</b> Electrical Maintenance <b>1985</b> Fundamentals of Welding Technology

Manufacturing Production Process Development Career Pathway Standards	
<ol style="list-style-type: none"> <li>1. Produce quality products that meet manufacturing standards and exceed customer satisfaction.</li> <li>2. Research, design, and implement alternative manufacturing processes to manage production of new and/or improved products.</li> <li>3. Monitor, promote, and maintain a safe and productive workplace using techniques and solutions that ensure safe production of products.</li> <li>4. Implement continuous improvement processes in order to maintain quality within manufacturing production.</li> <li>5. Develop procedures to create products that meet customer needs.</li> <li>6. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based</li> </ol>	

service projects to enhance leadership opportunities.	
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>MA1650 Industrial Robotics</b>
<b>Program Required Courses:</b>	<b>1889</b> FANUC Operator 1 <b>1890</b> FANUC Operator 2 <b>1929</b> FANUC Operator 3 <b>1930</b> FANUC Operator 4
<b>WV CTE Program of Study:</b>	<b>MA2235 Integrated Production Technology</b>
<b>Program Required Courses:</b>	<b>1575</b> AC Advanced Manufacturing I <b>1576</b> AC Advanced Manufacturing II <b>1577</b> AC Advanced Manufacturing III <b>1578</b> AC Advanced Manufacturing IV
<b>WV CTE Program of Study:</b>	<b>MA1630 Robotics</b>
<b>Program Required Courses:</b>	<b>1866</b> Robotics 1 <b>1867</b> Robotics 2 <b>(+Specialization)</b>
<b>Specialization Courses:</b>	<i>Must select one specialization area and complete the specialization courses to be a completer:</i> <b>Robotics</b> <b>1868</b> Robotics 3 <b>1869</b> Robotics 4 <b>or Drones</b> <b>1887</b> FAA 107 Ground Operations <b>1888</b> FAA 107 Flight Operations

### Production Career Pathway Standards

1. Diagnose production process problems and take corrective action to meet production quality standards.
2. Manage safe and healthy production working conditions and environmental risks.
3. Make continuous improvement recommendations based on results of production process audits and inspections.
4. Coordinate work teams when producing products to enhance production process and performance.
5. Demonstrate the safe use of manufacturing equipment.
6. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*

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<ul style="list-style-type: none"> <li>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</li> </ul>		
<b>WV CTE Program of Study:</b>	<b>MA1601</b>	<b>Aviation Maintenance Technician</b>
<b>Program Required Courses:</b>	<b>2012</b> Aviation Fundamentals I <b>2013</b> Aviation Fundamentals II <b>2014</b> Airframe Systems I <b>2015</b> Airframe Systems II	
<b>WV CTE Program of Study:</b>	<b>MA1900</b>	<b>Machine Tool Technology</b>
<b>Program Required Courses:</b>	<b>1903</b> Fundamentals of Machine Tool Technology <b>1905</b> Fundamentals of Machine Processes <b>1907</b> Machine Tool Operations <b>1909</b> Metal Trades Processes and Applications	
<b>WV CTE Program of Study:</b>	<b>MA2120</b>	<b>Millwork and Cabinetmaking</b>
<b>Program Required Courses:</b>	<b>2126</b> Millwork and Cabinetmaking I <b>2127</b> Millwork and Cabinetmaking II <b>2128</b> Millwork and Cabinetmaking III <b>2129</b> Millwork and Cabinetmaking IV	
<b>WV CTE Program of Study:</b>	<b>MA1980</b>	<b>Welding</b>
<b>Program Required Courses:</b>	<b>1862</b> Welding I <b>1863</b> Welding II <b>1864</b> Welding III <b>1865</b> Welding IV	

### Marketing Career Cluster™ (MK)

Marketing Management Career Pathway Standards		
<ol style="list-style-type: none"> <li>Plan, organize, and lead marketing staff to achieve business goals.</li> <li>Plan, manage, and monitor day-to-day marketing management operations.</li> <li>Plan, manage, and organize to meet the requirements of the marketing plan.</li> <li>Access, evaluate, and disseminate information to aid in making marketing management decisions.</li> <li>Determine and adjust prices to maximize return and meet customers' perceptions of value.</li> <li>Obtain, develop, maintain, and improve a product or service mix in response to market opportunities.</li> <li>Communicate information about products, services, images and/or ideas.</li> <li>Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.</li> </ol>		
<b>Notes:</b> <ul style="list-style-type: none"> <li>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</li> <li>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</li> <li>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</li> </ul>		
<b>WV CTE Program of Study:</b>	<b>MK0420</b>	<b>Marketing Management</b>
<b>Program Required Courses:</b>	<b>0422</b> Marketing Principles <b>0425</b> Marketing Applications	

	<b>0426</b> Cross-Media Marketing <b>0428</b> Marketing Work Experience/Internship
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### Science, Technology, Engineering & Mathematics Career Cluster™ (ST)

#### Engineering & Technology Career Pathway Standards

1. Use science, technology, engineering, and mathematics (STEM) concepts and processes to solve problems involving design and/or production.
2. Display and communicate STEM information.
3. Apply processes and concepts for the use of technological tools in STEM.
4. Apply the elements of the design process.
5. Apply the knowledge learned in STEM to solve problems.
6. Apply the knowledge learned in the study of STEM to provide solutions to human and societal problems in an ethical and legal manner.
7. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

#### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

*\*New Age Engineering I (2495) is a prerequisite for New Age Engineering II (2460).*

<b>WV CTE Program of Study:</b>	<b>ST2200 Aerospace Engineering</b>
<b>Program Required Courses:</b>	<b>1540</b> AC Aerospace Engineering I <b>1541</b> AC Aerospace Engineering II <b>1542</b> AC Aerospace Engineering III <b>1543</b> AC Aerospace Engineering IV
<b>WV CTE Program of Study:</b>	<b>ST2175 Energy and Power</b>
<b>Program Required Courses:</b>	<b>2485</b> AC Energy, Power and Engineered Systems I <b>2486</b> AC Energy, Power and Engineered Systems II <b>2487</b> AC Energy, Power and Engineered Systems III <b>2488</b> AC Energy, Power and Engineered Systems IV
<b>WV CTE Program of Study:</b>	<b>ST2460 Pre-Engineering</b>
<b>Program Required Courses:</b>	<b>2461</b> Introduction to Engineering Design <b>2463</b> Principles of Engineering <b>(+Specializations)</b>
<b>Specialization Courses:</b>	<i>Must select two:</i> <b>2459</b> New Age Engineering I <b>2460</b> New Age Engineering II* <b>2462</b> Digital Electronics <b>2464</b> Engineering Design and Development <b>2465</b> Computer Integrated Manufacturing <b>2466</b> Civil Engineering and Architecture <b>2468</b> Aerospace Engineering

	<b>2469</b> Environmental Sustainability
	<b>2806</b> Computer Science Principles

### Transportation, Distribution & Logistics Career Cluster™ (TR)

Facility & Mobile Equipment Maintenance Career Pathway Standards	
<ol style="list-style-type: none"> <li>1. Develop preventative maintenance plans and systems to keep facility and mobile equipment inventory in operation.</li> <li>2. Design ways to improve facility and equipment system performance.</li> <li>3. Demonstrate the effective use of computer-based equipment (containing embedded computers or processors) to control electromechanical devices commonly used in conducting work within industry.</li> <li>4. Manage ongoing customer relationships with both internal and external customer groups in order to maintain ongoing business.</li> <li>5. Assess and implement measures to maintain safe and healthful working conditions within the organization.</li> <li>6. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.</li> </ol>	
<b>Notes:</b> <ul style="list-style-type: none"> <li>• <i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li>• <i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li>• <i>Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>TR1620 Automotive Technology</b>
<b>Program Required Courses:</b>	<b>1631</b> Automotive Technology Maintenance and Light Repair (MLR)-1 <b>1623</b> Automotive Technology MLR-2 <b>1625</b> Automotive Technology MLR-3 <b>1637</b> Automotive Technology MLR-4
<b>Specialization Courses:</b>	<i>Select the four courses listed below to complete the Automotive Service Technician (AST):</i> <b>1629</b> Automotive Technology AST-1 <b>1633</b> Automotive Technology AST-2 <b>1635</b> Automotive Technology AST-3 <b>1627</b> Automotive Technology AST-4
<b>WV CTE Program of Study:</b>	<b>TR1670 Collision Repair Technology</b>
<b>Program Required Courses:</b>	<b>1671</b> Fundamentals of Collision Repair Technology <b>1675</b> Non-Structural Analysis and Damage Repair <b>1677</b> Structural Analysis and Damage Repair <b>1679</b> Surface Preparation and Refinishing
<b>WV CTE Program of Study:</b>	<b>TR1740 Diesel Equipment Technology</b>
<b>Program Required Courses:</b>	<b>1751</b> Fundamentals of Diesel Equipment Technology <b>1744</b> Electronic Engine Control <b>1741</b> Diesel Engine Components

	<b>1747</b> Diesel Support Systems
<b>WV CTE Program of Study:</b>	<b>TR1960</b> Power Equipment Systems
<b>Program Required Courses:</b>	<b>1962</b> Fundamentals of Power Equipment I <b>1964</b> Fundamentals of Power Equipment II <b>1966</b> Power Equipment Service I <b>1968</b> Power Equipment Service II

#### Transportation Systems / Infrastructure Planning, Management & Regulation Career Pathway Standards

1. Develop plans to maintain and/or improve the transportation infrastructure.
2. Assess, plan, and manage the implementation of transportation services.
3. Describe ways to improve the system utilization, flow, safety, and environmental performance of transportation systems.
4. Participate in a co-curricular CTSO that provides a variety of ongoing school and community-based service projects to enhance leadership opportunities.

##### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance Document of Policy 2520.13.*

<b>WV CTE Program of Study:</b>	<b>TR2215</b> Global Logistics and Supply Chain Management
<b>Program Required Courses:</b>	<b>1555</b> AC Global Logistics and Supply Chain Management I <b>1556</b> AC Global Logistics and Supply Chain Management II <b>1557</b> AC Global Logistics and Supply Chain Management III <b>1558</b> AC Global Logistics and Supply Chain Management IV

#### West Virginia Career Cluster (WV)

#### Career Integrated Experiential Learning Career Pathway Standards

1. Develop skills and practices required for entry-level employment.
2. Demonstrate basic mathematical, reading, writing, critical, and creative thinking, decision-making, and problem-solving skills to effectively perform entry-level career tasks.
3. Model positive work behaviors and personal qualities, including displaying a willingness to acquire new knowledge and skills, demonstrating integrity in a work situation, and indicating a willingness to follow rules and procedures.
4. Investigate interpersonal skills, including teamwork, conflict management, and problem solving.
5. CIEL pathway completers will not be considered state-approved completers for career-readiness accountability measures.

##### Notes:

- *Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.*
- *EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.*
- *Student certifications for all state-approved programs of study can be located in the Guidance*



<i>Document of Policy 2520.13.</i>	
<b>WV CTE Program of Study:</b>	<b>WV5501 Career Integrated Experiential Learning (CIEL)</b>
<b>CTE Required Course(s):</b>	A CIEL completer's personalized program of study must contain a minimum of two required/specialized courses provided as part of the county's state-approved program offerings. Required and specialized courses are outlined in the 16 nationally recognized career clusters listed within this policy.
<b>CIEL Program Courses:</b>	<i>A CIEL completer's personalized program of study may include up to two of the following CIEL courses:</i> <b>0522</b> Ready to Work 1 <b>0520</b> Work-Based Integration and Transition 1 <b>0524</b> Ready to Work 2

<b>Individual Work Ready Competencies (IWRC) Career Pathway</b>	
<ol style="list-style-type: none"> <li>The IWRC pathway is designed to provide some students with an IEP who are pursuing a standard high school diploma the opportunity to gain work readiness and occupation ready skills related to their desired CTE career programs of study during high school.</li> <li>An IWRC student must enroll in the four required CTE program of study courses as detailed in this policy and plan to enter the workforce directly after high school with OJT-training, apprenticeship, or continued technical training as an adult.  <b>Prerequisites:</b> Before selecting IWRC, students must have initially selected a state-approved CTE program of study option, passed ALL safety exams with a 100%, demonstrated the ability to acquire basic/core CTE skills at an entry level, and were unable to master ALL of the required skillsets associated with their chosen state-approved CTE program of study.</li> <li>The Personalized Education Plan (PEP) and the student's IEP must be updated to reflect the change from state-approved CTE program of study to state-approved IWRC.</li> <li>The IEP for the student describes any specially designed instruction, support, or accommodations necessary for student success.</li> <li>Students enrolled in the IWRC pathway must master the agreed upon CTE skillsets within the state-approved WVDE program of study in order to be counted as a CTE completer. IWRC pathway completers will not be considered CTE completers for Career Readiness accountability measures.</li> </ol> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li><i>IWRC is an option for ALL state-approved CTE programs of study.</i></li> <li><i>Successful completers will demonstrate their technical skills attainment through the CTE portfolio and state-approved technical assessment processes.</i></li> <li><i>EVERY student must pass ALL safety exams with a score of 100% before having access to available equipment.</i></li> <li><i>CTE staff must be represented at students' IEP Team meetings when the student is a prospective CTE participant.</i></li> <li><i>CTE instructors must confirm that they have read the most recent IEP in order to document awareness of students' needs.</i></li> </ul>	
<b>WV CTE Program of Study:</b>	<b>WV5502 Individual Work Ready Competencies (IWRC)</b>
<b>IWRC Program Requirements:</b>	Eligibility for participation in IWRC will be based on the following: <ul style="list-style-type: none"> <li>students shall have a current IEP and be pursuing a standard diploma,</li> <li>students shall be provided accommodations and/or supports as</li> </ul>

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	<p>indicated in the IEP,</p> <ul style="list-style-type: none"><li>• students must pass ALL safety exams with a score of 100%, and</li><li>• student is unable to master ALL required skillsets of the CTE program of study</li></ul>
<b>Program Evaluation:</b>	<ul style="list-style-type: none"><li>• <i>The student will follow the state-approved CTE program of study, as well as all specialized courses associated with the program that is available at their local CTE center, comprehensive high school, high school, or multi-county center.</i></li><li>• <i>The student will follow the IWRC skillsets established.</i></li><li>• <i>The student will complete the appropriate technical assessment for the CTE program of study and the CTE portfolio with accommodations or supports as indicated in the IEP.</i></li></ul>
<b>Recommended Student Certification(s):</b>	The IWRC student will be eligible to test for all industry certifications upon meeting qualifications.

## ACE Programs of Study

**Advanced Career Education (ACE)**

1. All ACE students who enter CTE centers must have a high school diploma or High School Equivalency (HSE) diploma. Persons interested in CTE not possessing a high school diploma or a HSE diploma will be referred to an Adult Learning Center. An ACE student must obtain a diploma or HSE prior to enrollment.
2. All ACE students who enter CTE centers should be assessed prior to enrollment. Pre-assessment requirements will be determined by the institution. All students upon entering an ACE program must be documented in the WVEIS ACE Dashboard.
3. The enrollment process for ACE students shall include full disclosure of:
  - exact program of study title and course plan of study/course sequence;
  - number of clock/credit hours of instruction to be provided;
  - tuition, fees, and other program costs;
  - course skills sets and instructional outcomes;
  - national certifications/credentials to be earned with disclosure of any waiting periods or work requirements to sit for the exam;
  - articulation agreements available;
  - student performance expectations and graduation requirements; and
  - admission and academic requirements for enrollment.
4. ACE programs of study that are designed to lead to a completion certificate, credential and/or career must be submitted to the WVDE for approval, regardless of funding source.
5. The institution shall maintain records, which include student attendance, grades, and academic progress.
6. The institution shall maintain appropriate written policies, procedures and plans in accordance to their accrediting agency.
7. The institution shall be responsible for submitting all state, federal, and accreditation reports, including, but not limited to:
  - Enrollment;
  - Periods of Enrollment;
  - Awarded Certifications/Credentials;
  - Graduates/Completers;
  - Community Partnerships;
  - Placement and Licensure; and
  - Tuition and additional fees.
8. Local education agency personnel shall offer ACE training programs in viable occupational areas and work closely with local business and industry to provide high quality training and retraining programs for employees.
9. CTE centers are encouraged to participate in additional postsecondary articulation agreements with community colleges and universities.
10. CTE center shall establish an institutional advisory council to provide advice on current workforce needs and the relevancy of programs being offered at the school.
11. CTE centers may be accredited by an agency recognized by the ED.
12. CTE centers may participate in financial aid programs.
13. CTE centers shall offer assessment, remediation, counseling, and placement services as components of ACE programs of study.
14. CTE centers must establish definitive start and end dates for each ACE program of study. No student may be enrolled if 5% or more of the program instruction has been completed.

## Funding Sources

1. The WVBE will fund ACE programs of study up to levels of funding available from state and federal sources.
2. CTE centers may charge tuition and fees for educational services provided by the institution. "The board of education of any county shall have authority to provide classes and programs for adult education and to charge tuition for members of such classes and/or programs, such tuitions not to exceed in any case the actual cost of operation of such classes and/or programs." W. Va. Code §18-5-19b.
3. Tuition that is received for ACE programs of study shall be used to start new classes and maintain currently established classes. "Any funds accruing from such tuition shall be credited to adult education in the current expense fund of the county board of education and reported each year as of June thirtieth in the manner required for other financial reports of the board." W. Va. Code §18-5-19b.
4. Funds will be allocated to county boards of education for each ACE student enrolled in a program of study based on FTE under the state aid funding formula. The per pupil allocation will vary by county. These funds are restricted to being spent for ACE programs on behalf of the career centers and must be utilized to reduce tuition costs for program offerings at the institution.
  - Funds for Grade 14 students will be included with the general school aid funding allocation. Grade 14 students shall not be charged tuition or fees.
  - Funds for Grade 18 students will be included with the ACE school aid funding allocation.

WV ACE Program of Study	HU9205	American Sign Language (ASL) Interpreter	Credits
<b>HU9205-1: American Sign Language (ASL) Interpreter</b>			
Minimum Contact Hours: 600	<b>9349</b>	ASL Interpreter I	4
	<b>9350</b>	ASL Interpreter II	4
	<b>9351</b>	ASL Interpreter III	4
	<b>9352</b>	ASL Interpreter IV	4
TOTAL CREDITS			<b>16</b>

WV ACE Program of Study	MA9709	Automated Manufacturing Technology	Credits
<b>MA9709-1: Automated Manufacturing Technology</b>			
Minimum Contact Hours: 1200	<b>9223</b>	Fundamentals of Industrial Equipment Maintenance	3
	<b>9224</b>	Hydraulics & Pneumatic Systems	3
	<b>9300</b>	AMT I	4
	<b>9301</b>	AMT II	4
	<b>9302</b>	AMT III	4
	<b>9303</b>	AMT IV	4
	<b>9304</b>	AMT V	4
	<b>9305</b>	AMT VI	4
	<b>9306</b>	Employability Skills Preparation	2
TOTAL CREDITS			<b>32</b>

WV ACE Program of Study	TR9801	Automotive Technician	Credits
<b>TR9801-1: Automotive Technician MAST</b>			
Minimum Contact Hours: 1200	<b>9320</b>	Automotive MAST – Fundamentals	4
	<b>9321</b>	Automotive MAST – Brakes	4

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	<b>9322</b> Automotive MAST – Steering & Suspension	4
	<b>9323</b> Automotive MAST – Engine Repair	4
	<b>9324</b> Automotive MAST – Electrical & Electronic Systems	4
	<b>9325</b> Automotive MAST – Engine Performance	3
	<b>9326</b> Automotive MAST – HVAC	3
	<b>9327</b> Automotive MAST – Manual Transmissions	3
	<b>9328</b> Automotive MAST – Automatic Transmissions & Transaxle	3
<b>TOTAL CREDITS</b>		<b>32</b>
<b>TR9801-2: Automotive Technician AST</b>		
Minimum Contact Hours: 840	<b>9329</b> Automotive AST – Fundamentals	3
	<b>9330</b> Automotive AST – Brakes	3
	<b>9331</b> Automotive AST – Steering & Suspension	3
	<b>9332</b> Automotive AST – Engine Repair	3
	<b>9333</b> Automotive AST – Electrical & Electronic Systems	2
	<b>9334</b> Automotive AST – Engine Performance	2
	<b>9335</b> Automotive AST – HVAC	2
	<b>9336</b> Automotive AST – Manual Transmissions	2
	<b>9337</b> Automotive AST – Automatic Transmissions & Transaxle	2
<b>TOTAL CREDITS</b>		<b>22</b>
<b>TR9801-3: Automotive Technician MLR</b>		
Minimum Contact Hours: 540	<b>9243</b> Automotive MLR – Fundamentals	2
	<b>9244</b> Automotive MLR – Brakes	2
	<b>9245</b> Automotive MLR – Steering & Suspension	2
	<b>9246</b> Automotive MLR – Engine Repair	2
	<b>9248</b> Automotive MLR – Electrical & Electronic Systems	2
	<b>9249</b> Automotive MLR – Engine Performance	1
	<b>9250</b> Automotive MLR – HVAC	1
	<b>9251</b> Automotive MLR – Manual Transmissions	1
	<b>9255</b> Automotive MLR – Automatic Transmissions & Transaxle	1
<b>TOTAL CREDITS</b>		<b>14</b>

<b>WV ACE Program of Study</b>	<b>MA9710 Aviation Maintenance Technician</b>	<b>Credits</b>
<b>MA9710-1: Aviation Maintenance Technician</b>		
Minimum Contact Hours: 1080	<b>9307</b> Aircraft Turbine Engines	4
	<b>9308</b> Aviation Basic Electricity	4
	<b>9309</b> Aircraft Engine Systems	4
	<b>9310</b> Engine Electrical Systems	4
	<b>9346</b> AMT General	4
	<b>9347</b> AMT Airframe	4
	<b>9348</b> AMT Powerframe	4
<b>TOTAL CREDITS</b>		<b>28</b>

<b>WV ACE Program of Study</b>	<b>HU9501 Barbering</b>	<b>Credits</b>
<b>HU9501-1: Barbering with Chemicals</b>		

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Minimum Contact Hours: 1500	<b>9171</b> General Professional Information	3
	<b>9172</b> Introduction to Barbering	1
	<b>9173</b> The Science of Barbering	9
	<b>9174</b> Professional Barbering	20
	<b>9175</b> Advanced Barbering with Chemicals	7
<b>TOTAL CREDITS</b>		<b>40</b>
<b>HU9501-2: Barbering</b>		
Minimum Contact Hours: 1200	<b>9171</b> General Professional Information	3
	<b>9172</b> Introduction to Barbering	1
	<b>9173</b> The Science of Barbering	9
	<b>9174</b> Professional Barbering	20
<b>TOTAL CREDITS</b>		<b>33</b>

<b>WV ACE Program of Study</b>	<b>HE9308</b>	<b>Certified Nursing Assistant</b>	<b>Credits</b>
<b>HE9308-1: Certified Nursing Assistant</b>			
Minimum Contact Hours: 150	<b>9108</b>	Certified Nursing Assistant	4
<b>TOTAL CREDITS</b>			<b>4</b>

<b>WV ACE Program of Study</b>	<b>MA9704</b>	<b>Certified Welder</b>	<b>Credits</b>
<b>9704-1: Certified Welder</b>			
Minimum Contact Hours: 900	<b>9311</b>	SMAW – Plate	3
	<b>9312</b>	GMAW – Plate	3
	<b>9313</b>	FCAW – Plate	3
	<b>9314</b>	GTAW – Plate	3
	<b>9315</b>	SMAW – Pipe	3
	<b>9316</b>	GMAW – Pipe	3
	<b>9317</b>	FCAW – Pipe	3
	<b>9318</b>	GTAW – Pipe	3
<b>TOTAL CREDITS</b>			<b>24</b>
<b>9704-2: SMAW-Plate Welder</b>			
Minimum Contact Hours: 113	<b>9311</b>	SMAW – Plate	3
<b>TOTAL CREDITS</b>			<b>3</b>
<b>9704-3: GMAW-Plate Welder</b>			
Minimum Contact Hours: 113	<b>9312</b>	GMAW – Plate	3
<b>TOTAL CREDITS</b>			<b>3</b>
<b>9704-4: FCAW-Plate Welder</b>			
Minimum Contact Hours: 113	<b>9313</b>	FCAW – Plate	3
<b>TOTAL CREDITS</b>			<b>3</b>
<b>9704-5: GTAW-Plate Welder</b>			
Minimum Contact Hours: 113	<b>9314</b>	GTAW – Plate	3
<b>TOTAL CREDITS</b>			<b>3</b>
<b>9704-6: SMAW-Pipe Welder</b>			
Minimum Contact Hours: 113	<b>9315</b>	SMAW – Pipe	3
<b>TOTAL CREDITS</b>			<b>3</b>
<b>9704-7: GMAW-Pipe Welder</b>			
Minimum Contact Hours: 113	<b>9316</b>	GMAW – Pipe	3
<b>TOTAL CREDITS</b>			<b>3</b>

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<b>9704-8: FCAW-Pipe Welder</b>			
Minimum Contact Hours: 113	<b>9317</b>	FCAW – Pipe	3
TOTAL CREDITS			<b>3</b>
<b>9704-9: GTAW-Pipe Welder</b>			
Minimum Contact Hours: 113	<b>9318</b>	GTAW – Pipe	3
TOTAL CREDITS			<b>3</b>

WV ACE Program of Study	TR9803	Commercial Driving	Credits
<b>TR9803-1: Commercial Driving</b>			
Minimum Contact Hours: 300	<b>9283</b>	CDL – Class A	4
	<b>9289</b>	CDL – Class B	2
	<b>9290</b>	CDL – School Bus Endorsement	1
	<b>9291</b>	CDL – Passenger Endorsement	1
	<b>9292</b>	CDL – Hazardous Materials	1
TOTAL CREDITS			<b>9</b>
<b>TR9803-2: Commercial Driving Class A</b>			
Minimum Contact Hours: 150	<b>9283</b>	CDL – Class A	4
TOTAL CREDITS			<b>4</b>
<b>TR9803-3: Commercial Driving Class B</b>			
Minimum Contact Hours: 75	<b>9289</b>	CDL – Class B	2
TOTAL CREDITS			<b>2</b>
<b>TR9803-4: Commercial Driving School Bus Endorsement</b>			
Minimum Contact Hours: 40	<b>9290</b>	CDL – School Bus Endorsement	1
TOTAL CREDITS			<b>1</b>
<b>TR9803-5: Commercial Driving Passenger Endorsement</b>			
Minimum Contact Hours: 15	<b>9291</b>	CDL – Passenger Endorsement	1
TOTAL CREDITS			<b>1</b>
<b>TR9803-6: Commercial Driving Hazardous Materials Endorsement</b>			
Minimum Contact Hours: 15	<b>9292</b>	CDL – Hazardous Materials	1
TOTAL CREDITS			<b>1</b>

WV ACE Program of Study	HU9505	Cosmetology	Credits
<b>HU9505-1: Cosmetology</b>			
Minimum Contact Hours: 1800	<b>9190</b>	General Professional Information	3
	<b>9191</b>	The Science of Cosmetology/Hair Styling	7
	<b>9192</b>	Professional Cosmetology/Hair Styling	12
	<b>9193</b>	Chemicals	5
	<b>9194</b>	The Science of Aesthetics	4
	<b>9195</b>	Skin Sciences	4
	<b>9196</b>	General Aesthetics	5
	<b>9197</b>	The Science of Nail Technology	2
	<b>9198</b>	Basic Nail Procedure	2
	<b>9199</b>	Art of Nail Technology	6
TOTAL CREDITS			<b>50</b>
<b>HU9505-2: Hair Styling</b>			
Minimum Contact Hours: 1000	<b>9190</b>	General Professional Information	3
	<b>9191</b>	The Science of Cosmetology/Hair Styling	7

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	<b>9192</b> Professional Cosmetology/Hair Styling	12
	<b>9193</b> Chemicals	5
<b>TOTAL CREDITS</b>		<b>27</b>
<b>HU9505-3: Aesthetics</b>		
Minimum Contact Hours: 600	<b>9190</b> General Professional Information	3
	<b>9194</b> The Science of Aesthetics	4
	<b>9195</b> Skin Sciences	4
	<b>9196</b> General Aesthetics	5
<b>TOTAL CREDITS</b>		<b>16</b>
<b>HU9505-4: Nail Technology</b>		
Minimum Contact Hours: 400	<b>9190</b> General Professional Information	3
	<b>9197</b> The Science of Nail Technology	2
	<b>9198</b> Basic Nail Procedure	2
	<b>9199</b> Art of Nail Technology	6
<b>TOTAL CREDITS</b>		<b>11</b>

<b>WV ACE Program of Study</b>	<b>HO9401 Culinary Arts</b>	<b>Credits</b>
<b>HO9401-1: Culinary Arts</b>		
Minimum Contact Hours: 1250	<b>9161</b> Safety and Sanitation	1
	<b>9162</b> Culinary Math	1
	<b>9163</b> Culinary Arts I	6
	<b>9164</b> Culinary Arts II	6
	<b>9165</b> Culinary Arts III	6
	<b>9166</b> Culinary Arts IV	6
	<b>9167</b> Human Relations Management	2
	<b>9168</b> Purchasing & Receiving	2
	<b>9169</b> Nutrition	3
<b>TOTAL CREDITS</b>		<b>33</b>

<b>WV ACE Program of Study</b>	<b>HE9306 Dental Assisting</b>	<b>Credits</b>
<b>HE9306-1: Dental Assisting</b>		
Minimum Contact Hours: 1080	<b>9090</b> Dental Assisting I	4
	<b>9091</b> Dental Assisting II	4
	<b>9092</b> Dental Assisting III	4
	<b>9093</b> Dental Assisting IV	4
	<b>9094</b> Dental Assisting V	2
	<b>9095</b> Dental Assisting VI	1
	<b>9096</b> Dental Assisting VII	2
	<b>9097</b> Dental Assisting VIII	7
<b>TOTAL CREDITS</b>		<b>28</b>

<b>WV ACE Program of Study</b>	<b>TR9802 Diesel Mechanic</b>	<b>Credits</b>
<b>TR9802-1: Diesel Mechanic</b>		
Minimum Contact Hours: 675	<b>9253</b> Diesel Mechanic I	4
	<b>9254</b> Diesel Mechanic II	4
	<b>9255</b> Diesel Mechanic III	4
	<b>9256</b> Diesel Mechanic IV	6



TOTAL CREDITS	<b>18</b>
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WV ACE Program of Study	ED9901	ECCAT	Credits
<b>ED9901-1: ECCAT</b>			
Minimum Contact Hours: 600	<b>9353</b>	Early Learning Child Development	4
	<b>9354</b>	Early Learning Special Needs Inclusion	4
	<b>9355</b>	Early Learning Language & Literacy*	4
	<b>9356</b>	Early Learning Numeracy*	4
TOTAL CREDITS			<b>16</b>
<i>*Early Learning Child Development (9353) and Early Learning Special Needs Inclusion (9354) are prerequisites for Early Learning Language &amp; Literacy (9355) and Early Learning Numeracy (9356).</i>			

WV ACE Program of Study	AR9101	Electrical Technician	Credits
<b>AR9101-1: Electrical Technician</b>			
Minimum Contact Hours: 1080	<b>9001</b>	Electrical Trade I	4
	<b>9002</b>	Electrical Trade II	4
	<b>9003</b>	Electrical Trade III	4
	<b>9004</b>	Electrical Trade IV	4
	<i>Must select four:</i>		
	<b>9005</b>	Blueprint Reading for Electricians	3
	<b>9006</b>	Industrial and Commercial Wiring	3
	<b>9007</b>	Integrated Electrical Lab	3
	<b>9008</b>	National Electrical Code	3
	<b>9009</b>	Residential Wiring	3
	<b>9010</b>	Rotating Devices and Control Circuitry	3
TOTAL CREDITS			<b>28</b>
<b>WVDE requirements to be eligible to sit for the Electrical Journeyman License:</b> <ul style="list-style-type: none"> <li>• Attain an overall grade of “B” or better in the four required state-approved ACE Electrician Technician Program of Study required course and the four specialized courses used to meet the 1080 hours needed to sit for the Journeyman License as stated in the Electrician Licensing Rule from West Virginia State Fire Marshall’s office;</li> <li>• Attain a verified school attendance record of no more than 6 days absent in a 1 year – 1,080 hour program or 12 days absent in a two year – 1080 hour program.</li> <li>• Earn the OSHA 10 certification;</li> <li>• Pass a minimum of TWO documented drug screenings; and</li> <li>• Score at or above the Workforce Entry Level cut score on the industry-recognized written AND satisfactorily pass a school identified performance assessment.</li> </ul>			

WV ACE Program of Study	HE9302	Electrocardiograph Technician	Credits
<b>HE9302-1: Electrocardiograph Technician</b>			
Minimum Contact Hours: 75	<b>9069</b>	Electrocardiograph Skills	2
TOTAL CREDITS			<b>2</b>

WV ACE Program of Study	AR9107	Heavy Equipment Operator	Credits
<b>AR9107-1: Heavy Equipment Operator</b>			
Minimum Contact Hours: 600	<b>9284</b>	Heavy Equipment Operator I	4
	<b>9285</b>	Heavy Equipment Operator II	4

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	<b>9286</b> Heavy Equipment Operator III	<b>4</b>
	<b>9287</b> Heavy Equipment Operator IV	<b>4</b>
<b>TOTAL CREDITS</b>		<b>16</b>

<b>WV ACE Program of Study</b>	<b>AR9105</b>	<b>HVAC Technician</b>	<b>Credits</b>
<b>AR9105-1: HVAC Technician</b>			
Minimum Contact Hours: 910	<b>9041</b>	Basic Refrigeration Theory	3
	<b>9042</b>	Electricity and Controls	3
	<b>9043</b>	Commercial Air-Conditioning Systems	3
	<b>9044</b>	Commercial Refrigeration System	3
	<b>9045</b>	System Installation, Air Distribution, and Balance	4
	<b>9046</b>	System Diagnostics, Troubleshooting, and Servicing	4
	<b>9047</b>	Heating Systems	4
<b>TOTAL CREDITS</b>			<b>24</b>

<b>WV ACE Program of Study</b>	<b>MA9705</b>	<b>Manufacturing Robotics</b>	<b>Credits</b>
<b>MA9705-1: FANUC Operator I</b>			
Minimum Contact Hours: 113	<b>9293</b>	FANUC Operator I	3
<b>TOTAL CREDITS</b>			<b>3</b>
<b>MA9705-2: FANUC Operator II</b>			
Minimum Contact Hours: 225	<b>9294</b>	FANUC Operator II	6
<b>TOTAL CREDITS</b>			<b>6</b>

<b>WV ACE Program of Study</b>	<b>HE9314</b>	<b>Massage Therapy</b>	<b>Credits</b>
<b>HE9314-1: Massage Therapy</b>			
Minimum Contact Hours: 675	<b>9155</b>	Massage Therapy I – History & Ethics	1
	<b>9156</b>	Massage Therapy II – Anatomy & Physiology	6
	<b>9157</b>	Massage Therapy III – Pathology & Contraindications	2
	<b>9158</b>	Massage Therapy IV – Kinesiology & Body Mechanics	3
	<b>9159</b>	Massage Therapy V – Professionalism & Business Practice	1
	<b>9160</b>	Massage Therapy VI – Swedish/Deep Tissue	3
	<b>9288</b>	Massage Therapy VII – Spa & Clinical Modalities	2
<b>TOTAL CREDITS</b>			<b>18</b>

<b>WV ACE Program of Study</b>	<b>HE9307</b>	<b>Medical Assisting</b>	<b>Credits</b>
<b>HE9307-1: Medical Assisting</b>			
Minimum Contact Hours: 1125	<b>9101</b>	Fundamentals of Medical Assisting	4
	<b>9102</b>	Principles of Medical Office Assisting	4
	<b>9103</b>	Administrative Medical Assisting	6
	<b>9104</b>	Clinical Medical Assisting I	6
	<b>9105</b>	Clinical Medical Assisting II	6
	<b>9107</b>	Medical Assistant Practicum	4
<b>TOTAL CREDITS</b>			<b>30</b>

WV ACE Program of Study	HE9301	Phlebotomy Technician	Credits
<b>HE9301-1: Phlebotomy Technician</b>			
Minimum Contact Hours: 225	<b>9065</b>	Phlebotomy Skills	6
TOTAL CREDITS			<b>6</b>

WV ACE Program of Study	AR9103	Plumber in Training	Credits
<b>AR9103-1: Plumber in Training</b>			
Minimum Contact Hours: 1080	<b>9022</b>	Plumbing I	7
	<b>9023</b>	Plumbing II	7
	<b>9024</b>	Plumbing III	7
	<b>9025</b>	Plumbing IV	7
TOTAL CREDITS			<b>28</b>

WV ACE Program of Study	HE9311	Practical Nursing	Credits
<b>HE9311-1: Practical Nursing</b>			
Minimum Contact Hours: 1350	<b>9123</b>	Practical Nursing - Principles & Fundamentals	5
	<b>9124</b>	Practical Nursing - Social Sciences Integrated	4
	<b>9125</b>	Practical Nursing - Anatomy & Physiology	2
	<b>9126</b>	Practical Nursing - Nutrition & Diet Therapy	1
	<b>9127</b>	Practical Nursing - Pharmacology	2
	<b>9128</b>	Practical Nursing - Medical Surgical	12
	<b>9129</b>	Practical Nursing - Geriatrics	3
	<b>9130</b>	Practical Nursing - Psychiatric Nursing	3
	<b>9131</b>	Practical Nursing - Obstetrics	2
	<b>9132</b>	Practical Nursing - Pediatrics	2
TOTAL CREDITS			<b>36</b>

WV ACE Program of Study	HE9312	Respiratory Therapy	Credits
<b>HE9312-1: Respiratory Therapy</b>			
Minimum Contact Hours: 2145  Notes: Additional courses must be taken to earn associate degree.	<b>9133</b>	RESP 105 – Patient Assessment	4
	<b>9134</b>	RESP 107 – Cardiopulmonary Pharmacology	3
	<b>9135</b>	RESP 111 – Respiratory Skills I	4
	<b>9136</b>	RESP 101 – Clinical Rotation I	
	<b>9137</b>	RESP 112 – Respiratory Skills II	3
	<b>9138</b>	RESP 115 – Pathology	3
	<b>9139</b>	RESP 102 – Clinical Rotation II	
	<b>9140</b>	RESP 220 – Mechanical Ventilation I	3
	<b>9141</b>	RESP 103 – Clinical Rotation III	
	<b>9142</b>	RESP 205 – Neonatal/Pediatric	3
	<b>9143</b>	RESP 210 – Cardiopulmonary Diagnostics I	3
	<b>9144</b>	RESP 221 – Mechanical Ventilation II	4
	<b>9145</b>	RESP 201 – Clinical Rotation IV	
	<b>9146</b>	RESP 207 – Alternate Health	2
	<b>9295</b>	RESP 209 – Clinical Simulations	2
	<b>9296</b>	RESP 211 – Cardiopulmonary Diagnostics II	3
	<b>9297</b>	RESP 215 – Review Seminar	2
	<b>9298</b>	RESP 217 – Professional Issues	2

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	<b>9299</b> RESP 202 – Clinical Rotations V	
<b>TOTAL CREDITS</b>		<b>41</b>

<b>WV ACE Program of Study</b>	<b>HE9313</b>	<b>Surgical Technology</b>	<b>Credits</b>
<b>HE9313-1: Surgical Technology</b>			
Minimum Contact Hours: 1200	<b>9147</b>	Surgical Technology Principles & Practices	4
	<b>9148</b>	Surgical Technology Medical Terminology	4
	<b>9149</b>	Surgical Technology A&P	4
	<b>9150</b>	Surgical Instruments	4
	<b>9151</b>	Surgical Technology Pharmacology	5
	<b>9153</b>	Surgical Procedure	5
	<b>9068</b>	Science Clinical Experience	6
<b>TOTAL CREDITS</b>			<b>32</b>

<b>WV ACE Program of Study</b>	<b>HE9305</b>	<b>Veterinary Technology</b>	<b>Credits</b>
<b>HE9305-1: Veterinary Technology</b>			
Minimum Contact Hours: 1816	<b>9081</b>	Introduction to Veterinary Technology	3
	<b>9082</b>	Veterinary Parasitology	3
Notes: Additional courses must be taken to earn associate degree.	<b>9083</b>	Animal Science	3
	<b>9084</b>	Veterinary Medical Terminology	2
	<b>9085</b>	Animal Anatomy & Physiology	4
	<b>9086</b>	Surgical Techniques & Nursing	5
	<b>9087</b>	Veterinary Pharmacology I	2
	<b>9088</b>	Companion Animal Diseases I	2
	<b>9089</b>	Seminar I	1
	<b>9338</b>	Preceptorship I	1
	<b>9339</b>	Veterinary Pathology	4
	<b>9340</b>	Large Animal Health & Disease	3
	<b>9341</b>	Laboratory Animal & Avian Medicine	3
	<b>9342</b>	Companion Animal Disease II	2
	<b>9343</b>	Veterinary Pharmacology II	2
	<b>9344</b>	Preceptorship II	2
	<b>9345</b>	Veterinary Capstone	4
<b>TOTAL CREDITS</b>			<b>46</b>